The Builder.

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Trade Arbitration at Home and Abroad.

THE ordinary daily journals are supposed to supply their readers with all the constantly occurring facts of our national life, so that they may know accurately the true course of events. But the want of proportion in journalistic presentment is often the cause of misunderstanding. If, for example, a strike of any importance occurs, it fills the news columns of the Press day after day, so that the public are impressed with the belief that labour disputes are long and bitter. Those cases in which differences between employers and workmen happen, and are quickly and amicably settled by conciliation or arbitration, are scarcely noticed. Differences of this kind there must always be, for bodies of men with adverse interests are no more likely to agree than are individuals in the same position. But though this fact is patent, it is not so obvious that there are many amicable settlements; if, however, we survey the trade world at home and abroad we shall find that masters and men, although they may differ, are constantly settling these differences by arbitration. If, for instance, we take the building trade, we find during the year 1900 that there were 146 disputes, affecting over sixteen thousand persons; of these forty-six were compromised, fifty ended in favour of the workpeople, and forty-seven in favour of the employers—figures which seem to show that the disputes were not unreasonable, since neither masters nor men had a preponderating gain by them. This is not surprising when it is borne in mind that, of the total number of disputes, no less than ninety-seven arose in regard to wages, a subject which it is as easy to differ over as the price of a house. All these figures are interesting and suggestive, but none are more so than those in regard to the amicable settlements of disputes. If we take all the disputes which have occurred throughout Great Britain we find that they number 648 for the year, of which 519 were settled either by arbitration, conciliation, or negotiation. "The great bulk," states the Board of Trade, "of the disputes of the year were ultimately settled by negotiation between the parties directly concerned or their representatives. Thus of the total of 648 disputes three-fourths were so arranged, and these embraced 82 per cent. of all the persons concerned in the disputes of the year, as against 87 per cent. for the previous year."* The difference is immaterial, the main fact being that a number of trade differences are settled in this manner. Some of these negotiations, of course, lasted for a long time, and if arbitration or conciliation had been employed, the end would, doubtless, have come earlier, for of the total number of disputes thirty-two were settled by this means. But it must not be supposed that these negotiations were ended after a long struggle, though it is equally certain that many of these differences would have been as satisfactorily and more quickly settled by arbitration.

If, however, we return to the question of disputes in the building trade, it is interesting to look a little more in detail into the twenty-four disputes which arose in the trade between July, 1899, and June, 1901. Of these sixteen were settled under the Act of Parliament. We find, for instance, that there was a dispute in May of the present year between the Amalgamated Society of Gasworkers, Brickmakers, and General Labourers and the Cheltenham Master Builders' Association, the former demanding an increase for all labourers from 5d. to 6d. per hour. Mr. A. A. Hudson was the arbitrator, and he refused the demands of the men. It is obvious that the moment a contest of this kind arises it should be settled by an impartial person. Nothing can be more absurd than an industrial battle, ruinous to all parties, about it. The same fate attended an attempt of the Staffordshire painters to obtain a rise of the standard wages from 7½d. to 8½d. In this case Mr. Blashill was arbitrator. The Board of Trade could not have made better selections of arbitrators, for Mr. Hudson has considerable judicial work as one of the Tribunal of Appeal under the London Building Act, and all our readers are familiar with Mr. Blashill's name. It also shows the value of the Conciliation Act of 1896 that both sides in a dispute can now refer to the Board of Trade to appoint an architect. Private persons have their disputes settled by a judge, and trade bodies have now a tribunal to which they appeal at once. It is also to be noted that London, Liverpool, Bristol, Birmingham, Macclesfield, Halifax, Wakefield, and Dewsbury have each a District Board of Conciliation—a fact which shows that, however inevitable trade disputes may be, there is also growing up the means of settling them in an amicable manner.

These official arbitrations also fulfil another purpose: they can bring the parties together without a formal award—a still more satisfactory manner of terminating a dispute. Thus there was a dispute between the builders' labourers and the employers of Reading, and Mr. Hudson's good offices were again called in. But, he says in his report, "after some discussion I was able to bring the parties to terms, and I enclose a copy of the agreement which I drew up and they signed and exchanged. There was therefore no need for me to make an award." That agreement embodied an advance of wages of from 5d. to 5½d. per hour, but it is evident that all that was needed to end the dispute was a reasonable discussion of it, presided over by an impartial person who could keep it within bounds and prevent harsh or intemperate language. When, also, we look at the agreements made between employers and workmen, we find evidence of the same reasonable spirit. Thus in the agreement of April, 1899, made between the Master Builders' Association and the Carpenters' and Joiners' Societies of Wigan and District, Rules XIV. and XV. practically enact that disputes shall be settled by arbitration. If a change is desired in the rules, a deputation of five working joiners shall meet the same number of employers, and if they fail to come to an understanding, the matter shall be referred to the Board of Arbitration, which is to consist of a body of five working men and five employers. This board is that which primarily settles all disputes between the employers and workmen, and should they not agree, which, of course, is unlikely, then the question as to the change in the rules or the trade dispute is to be referred to an umpire or sole arbitrator to be agreed on, and in case of disagreement to be nominated by the

* Report of the Chief Labour Commissioner on the Strikes and Locks-out of 1900-1901.

Third Report of the Board of Trade of Proceedings under the Conciliation (Trade Disputes) Act, 1896-1901.

Second Abstract of Foreign Labour Statistics, Board of Trade Labour Department, 1901.

Board of Trade. It must be confessed that the step of having a board of arbitrators might well be dispensed with, and time would be saved by going at once to a single umpire. But we are not concerned now with the wording of rules, it is rather with the spirit which inspires them. And we are fairly entitled to say that while it is evident there must in the near future be many trade disputes, there is equal certainty that many will be settled by arbitration or conciliation.

If we turn to the Continent and to America, we shall find in both places inevitable trade disputes and fortunately also a growing tendency to the less brutal methods of concluding them. If we glance, for example, at Germany, where so much energy and vitality is visible in all forms of trade, we find that in the year 1896, the last for which statistics are as yet supplied, there were forty-four applications for the intervention of the Industrial Courts. In France, in 1889, there were 740 strikes, and of these 197 were settled by the operation of the law of 1892; in seventy-nine cases the parties, one side or the other, refused arbitration or official conciliation; and further, in forty-two cases disputes were settled by conciliation committees. If we cast our eyes across the Atlantic we find that in the State of Massachusetts in the year 1896 the latest to which the statistics are as yet available, there were 100 trade disputes recorded, of which thirty-nine were submitted to the State Board of Arbitration and Conciliation, and that of these, nineteen disputes were in the building trade. These figures are not very large, and are infinitesimal compared to the total figures for the whole of the United States, which one day we hope may be presented to the English public. But they are sufficient to indicate the direction of the wind, and together with those from France and Germany they show that there is among masters and workmen a considerable spirit of reasonableness, which one may fairly hope may become more marked the further we advance into the new century.

SEWAGE AND SEAWEED.

THE Clyde at Glasgow and the Liffey at Dublin have long had the unenviable notoriety of being the most evil-smelling river-mouths in the United Kingdom. The sea-approach to Belfast during the summer and early autumn is even worse, and it is not surprising that the Corporation of this flourishing city has found it necessary to attempt a mitigation of the nuisance. The problem at Belfast is peculiar in that the nuisance is not directly caused by the flow of sewage into the lough, but is due to the decomposition of vast quantities of a particular seaweed, the "sea-lettuce" (*Ulva latissima*), which flourishes in the upper reaches of the lough, and during high winds is washed ashore, forming banks 2 ft. or 3 ft. thick and miles in length, and there putrefies, the result being an intolerable stench. As the weed has some value as a manure, part of it is carted away for the use of farmers, but the quantity thus removed is very small in comparison with the amount cast up by the sea. At Holywood—about four miles from Belfast, on the south shores of the lough—an attempt is made to remove it as quickly as it is deposited, but obviously this method would be very costly if applied to the whole of the foreshores over which the nuisance extends, and to prevent the extraordinary growth of the weed would undoubtedly be a better solution of the problem.

With this end in view, the Corporation instructed Dr. E. A. Letts, Professor of Chemistry in the Queen's College, Belfast, to prepare a Report on the proposed scheme of sewage purification, and its probable effects on the lough. This Report, which (somewhat curiously) is not dated, but which contains experiments on samples of sewage and effluents collected between January 6 and June 7 of this year, now lies before us. Dr. Letts shows (we think conclusively) that the occurrence of the sea-lettuce in large quantities in any locality is associated with the pollution of the sea water by sewage. The first ground for this opinion is the large proportion of nitrogen which the weed contains—more than 6 per cent. of the dry weight. The second is furnished by practical observation of the conditions under which it flourishes. In former times Belfast Lough was comparatively free from the sea-lettuce; it appears to have increased with the growth of the city. At the present day Strangford Lough, which is not far from Belfast Lough, but which differs from it in having no large town on its shores, is almost free from the weed. The case of Dublin Bay is particularly significant. The upper reaches are divided by the Pigeon-house wall (more than a mile and a half in length) into a northern and southern portion. The northern portion receives the sewage of the city and the sea-lettuce flourishes abundantly. The upper reaches of the southern portion are unpolluted and are free from the weed, but this is found again at Blackrock and Kingston on the south shore in the neighbourhood of their sewage outfall. Dr. Letts's third reason is based on actual experiment with the weed in samples of polluted sea water. He found that about 50 per cent. of the ammonia in the polluted water was absorbed by the weed in one hour, and nearly the whole of it in five hours.

This led naturally to another series of experiments. The purification of sewage effects a large reduction in the free ammonia, and thus reduces one kind of food which can be assimilated by the sea-lettuce. The question remained whether the albuminoid matters in the sewage effluent would, on dilution with sea water, change rapidly into ammonia or nitrates, both of which contribute to the growth of the weed. Experiments showed that the change was very slow, and Dr. Letts concludes that "their effect on the growth of the *Ulva latissima* may be disregarded." The purification of the sewage of Belfast may, therefore, reasonably be expected to remove some at least of the conditions which cause the sea-lettuce to flourish so abundantly.

The second half of the Report is said to deal with "the scheme of sewage purification proposed for Belfast." It really consists of an investigation of the degree of purification effected by four experimental contact-beds. The sewage is pumped into a storage reservoir, from which it is normally allowed to escape at the ebb tide. The contact-beds are fed from the storage reservoir, and are in two pairs, each pair consisting of an upper and lower bed. The sewage passes through one upper and one lower bed in six and a half hours as follows:—Filling upper bed, three-quarters of an hour; upper bed resting full, two and a half hours; emptying upper and filling lower bed, three-quarters of an hour; lower bed resting full, two and a half hours. The beds are 3 ft. 6 in. deep, one upper and the two lower beds being filled with broken bricks, and the other upper bed with coke, all the pieces being about the size of a hen's egg. The purification effected is less than that obtained in the experiments at Leeds, and very much less than that obtained at Manchester by the open septic-tank and double contact, and Dr. Letts thinks it "worth while to try the effects of septic tank treatment on the sewage previous to that of the bacteria beds." Certainly, the more experiments that are made the more surely will the foundations of the science of sewage purification be laid. Further experiments with different materials in the contact-beds would also prove interesting. The two beds of broken bricks gave better results than the other pair, which consisted of one bed of coke and one of brick. The second beds might advantageously be formed with much smaller material.

In addition to the usual analyses Dr. Letts has ascertained the nature and quantities of the dissolved gases in the sewage and first and second effluents. This is almost a new departure, and gives promise of interesting results. During the process of purification a considerable proportion of nitrogen disappears. Dr. Letts considers that a good deal of this may escape into the air as free nitrogen, while another portion is absorbed by insects, worms, and plants. The bacteria-beds must be regarded therefore "more as *dispersers* of nitrogen than as mere *converters* of it into simpler compounds."

It is somewhat strange that in the preliminary section on "The Methods of Sewage Disposal" Dr. Letts does not draw attention to what may be termed "percolating filters." In these the sewage after partial purification passes downwards in thin films or drops, the filters never being filled with sewage as in the case of contact-beds. The result is more thorough aëration and a higher degree of purification. Of course, the necessity for a high degree of purification is not as great at Belfast as in inland towns.

Dr. Letts's Report is undoubtedly an interesting contribution to the subject of sewage disposal, and adds something to the common stock of knowledge. The part dealing with the relation between sewage and seaweed is more conclusive than that treating of the method of sewage disposal. The analyses of the sewage and effluents were vitiated by the entrance of sea water into the contact-beds or by other causes, the amount of chlorine in the effluents being generally greater than in the settled sewage; on the other hand, in a few cases the chlorine in the effluents was less than in the settled sewage; in only one instance was the original quantity maintained.

NOTES.

London Water.

MR. LONG'S speech on Monday, in which he referred to the question of the London water supply, indicates very clearly the policy of the Government on this subject. They will

certainly introduce a Bill to constitute a public water authority for London and the immediately surrounding districts. Whether in a Session which is certain to be abnormal they will carry this measure through is quite another thing. This authority will have powers of rating, and the price to be paid to the companies will be assessed by what the President of the Local Government Board euphemistically calls a distinguished tribunal. Whether or not the public or the companies benefit by such arbitration, it is evident that there is a good thing in store for the lawyers. Mr. Long seems to think it is not altogether certain whether the House of Commons will accept the creation of an authority, not directly elected by the ratepayers, which shall have the power of levying money. Such a body would probably be just as economical as a directly elected body, but in these days it is doubtful if the theoretical objection to such a body will not be too strong. Representation and taxation are the watchwords of a democracy, and if the people are extravagant, that is their fault. However, time will show the public view on this point. At any rate, we now know the general scope of the promised measure. When it is introduced into Parliament the details will be given. It has also to be borne in mind that the Government have already on this subject tried and failed, and that was when they were in a much stronger position than they are to-day. We cannot, therefore, honestly expect much success in the coming Session.

The Bricklaying Trade.

UNDER the title of the "Crisis in British Industry," the *Times* on Monday last published a striking article on the manners and customs of the bricklayer of to-day. The gist of this article was that the bricklayer at the present time lays about half the number of bricks that he used to do, so that the cost of labour is just about doubled. He does this in order to make work for a larger number; in other words, he is a Socialist at the expense of the public. His action prevents individual industry; it keeps every man at the same level of earning power. If a man tries to earn more by strength or sustained labour he is regarded as a blackleg by his unionist companions, and life is made disagreeable to him. These facts, which we have merely summarised, are set forth at length in the article above mentioned, and chapter and verse is given for them. They merely state, however, in a popular form what is already known to many of our readers, though the subject is treated in a definite manner. What remedy there is for this state of things it is impossible to say; for when men work in gangs at manual tasks the power of the majority to repress industry is very great, and as long as there is capital to draw on, the power of the workman to act as he is now doing continues. It is to a certain degree a question of supply and demand. In a poor country it would be impossible for the general public to bear the cost.

A Proposed American Building in London.

THE daily papers have been publishing rather sensational statements in regard to a proposed immense block of building, of the American steel-frame and facing type, to be erected on the north side of the Strand, at a cost of two millions. This, as the statements come from an American source, probably means dollars, though the newspapers give it as pounds sterling. The information in regard to the forward state of the scheme must be rather premature, at all events, since we found on inquiry that the architect's department of the London County Council knew nothing whatever of it, and such a building could certainly not be erected in London without a special application for suspension of by-laws as to height, &c.

Railway Charges.

WE are so constantly being told of the superiority of American methods of railway working, that it is almost startling to read such remarks as the following, which were recently made by the president of a great trade convention in the United States: "In passenger transportation we are hemmed in with a lot of rules and regulations that seem unnecessary. In freight transportation matters are even worse. The many changes in classifications and tariffs have built up a system so complex, that it is almost necessary to educate a person specially to follow the many ins and outs of tariff sheets and freight matters generally." Clearly there is room for improvement elsewhere than in the old country. The rates and charges agitation of a few years back, the progress of which was closely followed in these columns, proved that we were in need of education on this question; and eventually resulted in the adoption of a uniform and intelligible classification. It is a matter for congratulation that we are not subjected to the sudden and arbitrary fluctuations of which American traders complain so strongly.

The Mond Gas Act.

THE South Staffordshire Mond Gas (Power and Heating) Company's Act was issued by the printers on Monday last. This Act, as our readers will remember, confers upon the company power to supply gas for heating and power purposes to a number of towns in South Staffordshire and East Worcestershire at a maximum price of 3d. per 1,000 cubic feet to consumers requiring not less than 16,000,000 cubic feet per annum, and 4d. per 1,000 cubic feet to consumers requiring less than this quantity. Some of the most noteworthy provisions of the Act are—(1) the minimum heating value of the gas is fixed at 125 British thermal units per cubic foot; (2) the gas must never contain more than 14 per cent. of carbon monoxide; (3) the Act does not confer upon the company any monopoly or exclusive right to supply gas within the districts mentioned; and (4) if any consumer uses the gas for lighting purposes the company is to cut off his supply. This is the first occasion upon which standards for heating power and carbon monoxide have been introduced into any gas Act in this country, but as illuminating gas supplied by other companies is now very largely used for heating purposes, we trust that it will be made a precedent for future Acts. Mond gas contains about 50 per cent. of incombustible nitrogen, and we are of opinion that the supply of water-gas at double the price would be of greater utility to the community in general, for water-gas is wholly combustible and of twice the heating value of Mond gas. The multiplication of companies vested with power to open public thoroughfares is to be deplored, but the supply of a cheap, smokeless fuel for both domestic and industrial purposes has become a matter of vital importance. When an existing gas company suggests a reduction in the illuminating power of the gas, with a proportionate reduction in the price, the company is at once suspected of endeavouring to snatch an advantage at the expense of the consumer, and probably no company other than one appearing as a thinly-disguised competitor would have received public support. A cheap mixture of coal-gas and water-gas, having a comparatively high heating value, eminently suitable for incandescent lighting, and capable (like methane) of being consumed without admixture with air before the point of ignition with either a non-luminous flame or a flame of feeble luminosity, would, we believe, best meet the requirements of present-day consumers, and would render it unnecessary to put down a second set of gas mains.

Testing Electrical Accessories.

THE suggestion made by Mr. Wordingham to the Institution of Electrical Engineers, that it should undertake the work of testing electrical accessories and fittings, seems to us to be an excellent one. The increased pressures of supply now in general use make it imperative, both in the interests of consumers and manufacturers, that only certified articles should be used in electric circuits. We had occasion recently to test a small switch which controlled five 16 c.-p. lamps on a 240-volt circuit. When it was pushed smartly down it broke the circuit satisfactorily, but on breaking the circuit slowly the arc set up destroyed the switch. In our opinion this switch, which is of a fairly common type, ought never to have been put in the circuit. With 240 volts the fittings need to be of very much better material and much more carefully designed than when 100 or even 200 volts is the pressure employed. An ordinary 100-volt 5-ampère switch only breaks a 240-volt circuit when the arc set up has melted most of the metal inside the switch. Another point that has now to be considered in connexion with switches is the insulation resistance of the base of the switch. There may be nothing to choose apparently between two switches, and yet the insulation resistance of one may be so low that, if it is fixed in a cellar, for example, it will lower the resistance of the whole wiring so much that the supply company will refuse to connect the installation to its mains. The other switch may have an insulation resistance so high that it is practically impossible to measure it. If the Institution started a testing laboratory for electrical accessories, something similar, for example, to the meter-testing laboratory of the Board of Trade, then we are sure manufacturers would gladly avail themselves of the opportunity of enhancing the value of their wares by getting them officially approved. Architects would have more confidence in specifying electrical fittings for their clients if they knew that these fittings had been certified as suitable by an independent authority.

Incrustation on St. Paul's Cathedral.

IN the "Proceedings" of the Chemical Society issued on the 16th inst., there appears a note by Mr. E. G. Clayton "On an Incrustation from the Stone Gallery of St. Paul's Cathedral." Reference is made to an in-

crustation present on the balustrade of Portland stone erected around the Stone gallery which, upon analysis, was found to consist mainly of hydrated sulphate of lime. Mr. Clayton is apparently surprised at the result, and indulges in speculation as to how such a deposit came to be formed upon a stone consisting mainly of carbonate of lime. "After a careful consideration of all the circumstances, and especially the characteristic appearance of the incrustation, it is suggested that the presence of the main component is principally due to two centuries' solvent and weathering action of rain, charged with sulphurous and sulphuric acids derived from the gases and smoke of innumerable surrounding chimneys." Had Mr. Clayton consulted a paper communicated by Dr. Voelcker as long ago as the year 1864 to the Society of Arts, he would have discovered that the composition of this incrustation closely approximated to those of similar incrustations examined by Dr. Voelcker, who also showed that ordinary soot contains sulphate of ammonia, and that this sulphate of ammonia converts carbonate of lime into sulphate of lime, which in the presence of moisture "takes up water of crystallisation and thereby leads to exfoliation of the stone." The analysis is, nevertheless, an interesting addition to the scanty list of analyses of similar incrustations previously recorded.

Metropolitan Improvements, Southwark.

A SITE in Leroy-street, Old Kent-road, has been acquired for the erection of dwellings to accommodate those members of the working classes who will be dispossessed by the improvements which are about to be carried out by the construction of a thoroughfare that will extend from the Borough High-street to the junction of Long-lane (formerly White-street) and Tabard (formerly Kent) street, passing around the north and east sides of St. George's Church. The new route, for which the London County Council voted 207,400*l.* four years ago, will pass through the churchyard that was opened as a public recreation ground on May 22, 1882, and over the site of part of the later Marshalsea Prison, which was built in 1811 on the site of the White Lion Inn that had been converted into a gaol in or about 1558. The new Marshalsea, overlooking the churchyard on its north side, served until 1849 as a prison for debtors, smugglers, and pirates. Of late years the male debtors' side—a block of eight houses, built back-to-back, four stories high, and containing seven rooms each—had been converted into a factory, approached from Angel-court, formerly Bridewell, or White Lion, alley; beyond was the "Tap" and turnkey's house, of which the second floor formed the female debtors' side; and beyond that the chapel and Admiralty Prison, latterly a registered lodging-house. No. 211, High-street covers the open forecourt of the gate-house; the rear part of the shop is the old "lock," and retains the four posts and cross beams, with their brackets, of the two prison gates. That is the Marshalsea of Dickens's novel; the name of "Little Dorrit" has been adopted for the children's playground, which is now being laid out on the sites of Falcon and Redcross courts on the opposite (west) side of the High-street. That highly insanitary area and haunt of the criminal classes comprises also Birdcage-alley, Maypole-alley, Brent's-court, and Adam's-place, the removal of which Dr. Waldo, as Medical Officer for St. George-the-Martyr parish, advocated in a report he made to the Vestry in January, 1894. It is stated that whilst 800 persons are thus displaced, the death-rate of children under one year of age was 407 to every 1,000 born, as against 163, and that of mortality from zymotic diseases amounted to 4·1 per 1,000, as compared with 2·7, during the period 1892-5 in the whole of London.

Well-walk, Hampstead.

IN the list we published last week of new sites for schools scheduled by the School Board for London is one which calls for a passing notice. One of two "alternative" sites at Hampstead consists of Nos. 7 and 9, Well-walk, which were formerly the Assembly-rooms of Hampstead Spa, No. 5 being the "Long Room." Our readers will recall that the three houses were scheduled in November of last year by the Board, and that the proposal to pull them down was strongly opposed by residents in the neighbourhood and others. On that occasion the School Board, who were then about to conclude their triennial term of office, relinquished their project in so far as it concerned the houses we mention. Whilst the out-going Board could not make any pledge that would be binding upon their successors, some kind of understanding seems to have prevailed in the district that the new Board would not include that site in their present scheme. At a public meeting held in the Drill Hall on Tuesday night it was resolved to protest against the action of the Board and to address memorials to the various authorities concerned.

The Society of Designers.

THE President of the Society of Designers, Mr. G. C. Haité, made some interesting remarks last Tuesday evening on "Design and Designers of the Victorian Epoch." Two or three hundred years is the limit of time that Mr. Haité will allow to the existence of designers or pattern-makers in this country; prior to the immigration of the Huguenots the crafts had not advanced beyond the primary conditions of weaving and dyeing. The Huguenots settled in certain parts of the country, notably the banks of the rivers Wandle and Cray, whose waters were peculiarly suitable from their chemical properties for dyeing and other manufacturing purposes. To these people, according to the lecturer, we owe all our handicrafts. Their descendants still continue the calling of their forefathers, in some instances every member of a family practising one or another of the arts. Mr. Haité divided design into three periods: the first that of the pattern-maker, the designer of simple dress materials and ornaments, who disappeared about the sixties of the last century, and whose work is still the delight of the collector: secondly, the period of the architectural designers, headed by Welby Pugin, Owen Jones, Burges, Eastlake, and Godwin; and thirdly, the present generation of decorative designers. In the early Victorian era, he said, it was the architects who pulled design out of the mud; decoration being a constructive art based on reasonable principles of fitness and proportion, no training so effectively taught the broad truths as an architect's. The proper relation of plain spaces to ornament and ornament to mouldings was one of the most difficult lessons for the decorative designer to learn. Touching upon the subject of such universal requirements as wall-papers, chintzes, &c., the lecturer laid the blame for their bad style entirely on the middleman. The middleman rules the manufacturer by threatening to boycott his goods; dictates to the public as to what they ought to like; and practically creates the demand. We ourselves have more than once, at some large West End shop, been told that such a thing is no longer correct; we must have this or that hideous novelty. As a panacea Mr. Haité pleaded for academic recognition of designers. In some organised form of co-operation between manufacturers and designers the future of the handicrafts should lie; in that way it will be possible to know that what we buy is the expression of individual artists in their own line of handicraft.

Mr. Abbey's Boston Pictures.

SOME years ago we noticed the remarkable series of five pictures by Mr. E. A. Abbey illustrating "The Quest of the Holy Grail," painted as mural decorations for the Public Library at Boston, U.S.A., and which were exhibited at Conduit-street before being sent out to America. These five represented the first portion only of the series; ten others, which complete it, are now finished and have been on view at the Guildhall Galleries. The subjects are (6) Sir Galahad meeting the "loathly ladye" and her companions after his exit from the Castle of the Grail; (7) Galahad slaying the "Seven Knights of Darkness" in the "Castle of the Maidens;" (8) a monk giving him the keys of the castle; (9) his reception by the imprisoned maidens—this is the central and largest subject, on a canvas 19 ft. long by 8 ft. high; (10) Galahad quitting his wife Blanche-fleur, in order that he may continue the quest; (11) Galahad again at the Castle of the Grail, where he has now sought the information he should have sought before, and is enabled to heal Amfortas of his wound; (12) Galahad on a white charger, passing through the land amid the benedictions of the people; (13 Galahad in Solomon's ship making the voyage to Sarras, an angel with outspread wings in the prow; (14) the city of Sarras; (15) Galahad before the Golden Tree at Sarras, surrounded by a circle of angels, and seeing his last vision of the Grail. The Arthurian legend has been rather freely treated, actions which properly belong to different knights being concentrated in the person of Galahad, in order to give unity to the representation. The whole forms a remarkable series of modern mural paintings, and Boston is fortunate to have a public building decorated in such a manner; but we do not know whether these latter pictures altogether equal the first five, as far as our recollection of them goes. The most effective are the attack on the seven knights, whose armour is of a most weird and picturesque type, and the closing picture of the series, a piece of purely conventional decorative work, but in that sense admirable. Next to these perhaps is the picture of Galahad riding through the land on his white charger; and the small picture of the city of Sarras is a curious and characteristic vision of a mediæval city. In the ship picture one cannot but feel that Galahad may well be engaged in prayer if

he has to cross a stormy sea in so inadequate a craft; and in these as in the earlier series, the artist's conception of Galahad hardly rises to the occasion—there is still rather too much of the Broad Church curate about him. But as a whole the series is no doubt a remarkable production in decorative painting.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS:

PICTORIAL MOSAIC.

An ordinary fortnightly meeting of the Royal Institute of British Architects was held on Monday evening at No. 9, Conduit-street, Regent-street, Mr. William Emerson, President, in the chair.

The minutes having been taken as read,

Mr. Alex. Graham, hon. secretary, announced the decease of one of the oldest members of the Institute, *i.e*, Mr. Frederick William Porter, who was elected an Associate in 1850 and a Fellow in 1855. Mr. Porter practised largely in London, and was well known to many architects in London. A short memoir of his career would be published in the "Journal." He was sure that the members would wish that a letter of condolence be sent to the members of the family of Mr. Porter.

This having been agreed to,

Mr. R. Anning Bell read a paper entitled, "Notes on the Practice of Pictorial Mosaic," of which the following is an abstract:—

Mosaic, the author said, was a method of artistic expression which had many advantages peculiar to itself, and which also had very definite limitations. It was obvious to anyone who had studied the work of the past that the realistic representation of natural effects, although it had been sometimes remarkably near success, was not the way to get the greatest beauty possible out of the material. The material proclaimed itself at the outset as being unsuitable for realistic effects for two reasons. The first and strongest was the uniformity of its surface which rendered it impossible to get that variety in the texture of the material which was the special reason why oil paint was so triumphantly superior to any other material in the rendering of the look of Nature; the second, the fact that it had to be applied in separate pieces with an interval, however small, between them. The tints could not shade off into each other with quite the subtlety of paint, and the interstices formed a lacework of ground colour and shadow which was the same all over the surface, and added to the monotony of the texture. The material, therefore, commanded a certain flatness as the effect to be aimed at, and, as a corollary to this, a certain archaism or stiffness in the design. This very flatness of effect imposed some restraint on the style of the design. It was not truly archaic, but was the fullest expression which the limits of the material permitted, and gave an artist plenty of elbow-room for his invention if he had any feeling for the method. For pictorial mosaic the subjects chosen must be such as are suitable to austere treatment. The play of facial expression or momentary gesture was out of court. The characters introduced could not be likenesses, or the occasion of their introduction a mere incident; the characters should be types, the incidents symbolic.

Discussing the practical questions of working and placing the mosaic, the author said that it should be some way from the eye, and a good deal higher up. Like many other good things, when you want it you want plenty of it; it is best of all when entirely covering a large space and unbroken by architectural mouldings. This applies more particularly to gold mosaic, which, when covering walls and domes, running round the arches, flashing into a glistening flake of light as it turns the corner, and covering every inch of space above the capitals of the columns, is much more satisfactory in effect than when used in juxtaposition with stout arch mouldings and pilasters. Small panels of mosaic, the author said, he did not like at all, even where they are merely filled with conventional foliage, though that is better than the clumsy look of small figures close beside the smooth and exact forms of the mouldings which frame them.

In interior work, gold mosaic—a treatment, that is, in which gold is largely employed—seems to be infinitely superior in effect to a treatment in colours only. For external work the author considered the use of gold a mistake. First, from the practical side, owing to the construction of the tesseræ, it was likely to be damaged by frost, as the film of glass which covered the gold-leaf was very easily flaked off should any water get into the interstices; and secondly, from the æsthetic side, there was no mystery of shadow to bring out its peculiar beauties; it glittered so strongly in sunshine as to destroy the effect of the design of which it formed part, and it was inclined to look rather garish even in ordinary daylight.

Treating of colour, the author advised a light scheme of colour as preferable to a deep one. The cooler colours are pleasanter than the warm ones when used in any quantity. Much orange is peculiarly unpleasant, and even reds should be sparingly employed, and rather as accents to strengthen other colours than in masses for their own sakes. Blues and greens tell well at a distance; they have a charming quality, will keep their colour very fairly, though one needs to use a much stronger blue than might be expected if it is to be at all rich in effect. It may be taken as a general rule that differences of any bright tints carry much further and tell much more strongly at a distance than similar differences in a lower key. In whites a very slight difference will have a very marked effect, and it will tell less close to the eye than some way off, whereas quite the opposite is true of strong colours, particularly of red. Difference of quality in the glass has also a marked effect on its carrying power.

As regards tesseræ, very great differences of size are unadvisable in figure-work. A few large pieces among a large number of small pieces is unsatisfactory. If, however, large pieces are mainly used, a few small pieces here and there will rather enhance the effect. As an interesting example of this, Professor Beresford Pite's mosaic outside Pergami's Restaurant was cited. The effect is quite unlike what we are used to in mosaic, but the author would like to see more work done in this method. It has many advantages in a place like London. Dirt cannot easily settle on it, and when it does is easily washed off. It is permanent, and, as the pieces are so large, less labour is required than with ordinary mosaic. For outside work the author found that a scale larger than was generally seen in old work might be used with good effect. Should varying sizes of tesseræ be used generally over the work, any place where they are kept of uniform size will infallibly attract the attention by its regularity; this would be seen in a pilaster forming part of the background of the panel at Horniman's Museum.

Careful study should be given to the size of the interstices. In background work they can be quite large if the colour is not wanted to be very pure, the dull tint of the putty toning down or saddening brighter colouring. In such parts as faces, hands, or other details to which particular attention should be attracted, they may be quite close together, so making a comparatively solid mass of colour, and giving emphasis to the part. In fact, it would be difficult to work a face without keeping the tesseræ close, as the tone of the interspaces would destroy the quiet modelling, which is all that is necessary or advisable.

Remembering the limitations of the mate ial, anything like truth of relative values or strength in the general effect of light and shade should not be attempted. Simplicity in modelling is desired. Variety of tone is obtainable by the relative strength of the colours used in different parts of the design. Realism of texture in draperies or other accessories should be avoided; trees, buildings, clouds, textiles, &c., should be felt to be rather symbols of those things than actual representations of them.

The author then treated of various matters and difficulties connected with the actual work of putting the mosaic upon the wall. His preference was for the method of doing the work *in situ*, a good result cannot possibly be obtained by other means. The modern Italian way, which the author described, is open to the obvious objection that you cannot see the progress of the work, and it is impossible to make alterations as you go on.

In translating the watercolour or pastel tints of the cartoons into coloured glass, a good deal of variety is possible, so that it is necessary to be always in touch with the workers to discuss with them which tint and quality of glass shall be used, and sometimes to vary from the cartoon when the work already finished may suggest it. The setting of the mosaic is an essentially artistic craft; it is absurd of the designer-in-chief to say simply: "Here is my cartoon; take it and copy it exactly." It is impossible to copy it anything like exactly, and consequently complete co-operation between designer and craftsman or craftswoman—for it is one of the things that women do admirably—is absolutely necessary.

Though the most splendid, as it is the most permanent form of wall or ceiling adornment, mosaic is extremely arbitrary, and any attempt to stretch its limits is terribly punished. It will not easily put up with rivalry, and will not endure other methods of decoration in immediate juxtaposition. In interior work it quarrels with stained glass, and it destroys gilding, as may be seen in many a Roman church where the choir-arch and columns are gilt around an apse of mosaic. Outside, the mosaic must be made the dominant in the scheme of which it forms part. No colour can stand near it but in humble subordination, and its surface texture requires considerable art and discretion in the choice of neighbouring materials. Nobly used, it nobly repays; ignobly used, it does nothing but disgust.

Mr. George Frampton, A.R.A., in proposing a vote of thanks to Mr. Bell, said he felt that men like Mr. Bell, Sir William Richmond, Mr. Walter Crane, Mr. Spence, and other workers in this very beautiful art were really doing a great service to the art of the country and to architecture. In half a dozen men and women we in this country had the finest mosaic workers in the world. Titian and other men who worked in mosaic, utterly failed, and the reason why they did so was that they had no knowledge of architecture. He did not see how a man could be a decorator unless he had been through a course of architecture, or had some love or appreciation of that art. It seemed to him that architecture governed all the arts, or should do. He quite agreed with Mr. Bell that they should avoid strong black shadows, otherwise they produced a kind of hole in the wall. Few people really understood decoration; they had an idea that it was easy to turn out some kind of shape, and that they called decoration, but it was nothing of the kind; it was abomination in decoration. What was wanted in decoration was the mind of the man, his own individuality and his appreciation of the surroundings of his work, which Mr. Bell always gave. Another thing he would like to impress upon architects, because he had learnt it himself, was that they could never get a successful decoration from a firm. He had never known a firm give anything that was really excellent, for no one in the firm had any real interest in the work, and he did not see how they could. The one idea of the firm was to get a profit, and the work was given to a workman who, as a rule, had very little or no feeling for art, and so it passed from one to another, and the result was that an inferior thing was produced which spoilt the building, and even if the building was bad it was much better not to add anything which would make it worse. Mr. Bell was one of the few men who really understood what was required to make a beautiful surface without making what he called a hole in the wall.

Mr. Walter Crane, in seconding the vote of thanks, said there was one minor point on which Mr. Bell made an ingenious comparison between the network formed by the cement lines in tesseræ and the textile lines which occurred in a half-tone process block. The textile line of a mosaic was a pleasing thing; one really delighted in it. It was in the nature of a built wall, a surface construction; and few things were more satisfactory than the simple joints of well-laid brickwork. In an irregular fashion one got that, too, in a mosaic, and that was a pleasing thing in itself. Mr. Bell made some suggestive remarks about a possible extended use of those joints, making them more open or narrower; and probably one might regard the putty or the joints, which were an essential part of the work, very much in the same way as one would regard the half-tone of the ground in painting; for instance, in working chalk on brown paper, one frequently left the paper in large interstices to speak for itself; it fell into the general scheme. So in mosaic, one might fairly regard the more or less brownish interstices as a kind of half-tone on which to impose colour. As regards the use of gold externally, most of them must have felt what Mr. Bell

expressed—that there was a certain glitter, a garishness, in it as used externally. That, he fancied, would largely disappear, perhaps, if it were not applied to a perfectly flat surface; but he was inclined to think that in no case did gold look well on a perfectly flat surface. A curved or concave surface was generally much finer, owing to the variation and gradation which the shadows gave, and also the half-light. Mr. Bell had spoken of the impossibility of reproducing a cartoon. He (the speaker), however, had made designs of mosaic long before the present method of working *in situ* upon the surface was revived with so much success. He remembered making some designs at the instance of Professor Aitchison for the Arab Hall in Lord Leighton's house, and those were executed, he believed, by the Murano Company. It was then necessary for the designer to make an exact cartoon, tesserating the whole of it, and marking all the joints in black, and he was very much astonished at the facility with which those designs were reproduced after the method Mr. Bell had described—viz., by laying down the work from the back. There was very little variation, the tesseræ were given with the utmost exactitude, and the matching of the colours, allowing for difference in brilliance and translation of the dead colour from the finished colour of the cartoon, was simply extraordinary; even then he believed there was some method of giving a little push to the work when they turned it round, especially to get more variation of facet upon the background. It was only fair to say that those panels would bear examination as good workmanship, so far as exactitude and precision went.

Mr. C. Harrison Townsend said that with Mr. Bell's introductory remarks on the principles of mosaic no one could fail to agree, but he particularly felt the strength of Mr. Bell's argument on behalf of what he pleaded for under the somewhat unhappy name of "archaism." A certain formal, a certain conventional feeling which was given to the expression of the figure and of nature in mosaic work was, unhappily, apt to be classed by those who did not understand the conventions and limitations of the material as a wilful attempt to imitate the method of work of those who had preceded them. He thought that Mr. Bell had made it clear that that stiffness, that formality, and that conventionality did not proceed from an attempt to imitate. As in architecture, so in every kind of decorative design, to attempt to do other than what the conditions allowed was doomed to failure, but to allow oneself to be influenced by the material and to shape the design according to the limitations of that material was to show oneself an artist and a man who recognised the method in which he worked. To work in mosaic necessarily implied, if they were logical or had common sense, certain limitations which had to be recognised. A worker in mosaic did recognise and accept them, and did the best within these limitations, which, however, robbed him of any hope of dealing in atmospheric effect. The glory of the sunset and the romance of the moonlight, for instance, to him were symbols of sentiment—they were not imitations of sentiment. Trees in mosaic did not represent trees of Nature, with the glistening of the sun or the tender white of the moonlight: they were symbols of trees; but, working in mosaic, one was paid for sacrificing those artistic attributes, and the reward was that one worked in an imperishable material. Mosaic work could resist all but fire; it could resist water, London fog, and all the vicissitudes of climate, and still be uninfluenced in its colour. It could hand down, as the Ravenna and Sicilian mosaics did, the colour scheme of the artist 1,000 years after he had perished—unchanged by time and undiminished in brilliancy. Mosaic work was the only artistic work that could be handed down as the artist did it, and that of course was a great privilege which was worth sacrificing something for. In reference to Mr. Bell's interesting remarks as to the technique of mosaic—the technique so far as the various cements were concerned—the decadence of mosaic work, curiously enough, coincided with the attainment of the one perfect cement. Up to about the year 1500 mosaic workers contented themselves with working in lime cement, and Muziano de Brescia was the first to use, in 1528, oil cement, which allowed them to obtain effects which were impossible with a quickly-setting cement. The new method allowed deliberation, and afforded opportunities for alteration, whereas by the old method work had to be done quickly.

Mr. F. R. Spence said he thought the technical part of mosaic work might well be left to the man who had to carry out the work. That was a matter they need not worry much about. Now that there was a general and growing interest in the use of mosaic for decoration, its treatment should be approached in a practical and common-sense manner. In all schemes of decoration the great battle lay in the design, its suitability, and its application to the right spaces, so that, as in all decorative art, no man should embark in its practice unless he possessed the rare gift of design. Great discrimination should be exercised in the selection of the surfaces to be covered with mosaic. In every case such selection should be of spaces which had at all times shed upon them the toning and uniting qualities of light and shadow. All interiors possessed these conditions more or less. External, flat, shadowless spaces were not quite satisfactory in this respect. They were always in one of two conditions—either in bright or else in unflecked shadow. Granted that these panels or friezes might be good schemes of colour, yet they were shorn of the added charm of permanent variety and mystery. In the actual material the more brilliant and solid the colour the better. He used to be delighted to get the slabs of material which had delicate gradations of colour in each piece, but when they were cut up and fixed all these gradations were lost. If they were right in the first place with the surface to be covered—being under a fixed condition of varying light and shadow—this light and shadow would give naturally the subtlety and mystery without destroying the effulgence of the colour scheme. Deep, almost crude tones become rich and mellow, not impoverished. His meaning might be made clearer by mentioning Titian's wonderful blue drapery, the shadows of which were a deep red. One should be liberal in one's areas of colour, and not fritter away by intersecting forms of ornament that in themselves were small in design. Drapery forms, fine in the designs of their lines and folds, were sufficient for the particular spaces they cover. Great spaces of blue or other colours in such forms as a dome, let its tincture be ever so crude, become harmonious from the natural shadows of its shape and the soft reflections of surrounding objects. The shadows and reflections were a broad and sweeping tone of softening unity. No mosaic, he thought, should be nearer the eye than 10 ft. Its function was to express the sentiment of colour, and not to usurp such attributes as need all the delicate and far-reaching craftsmanship capable of application to marble, metals, wood, &c. Some advocate that in the application of mosaic internally all mouldings and architectural features in any other materials should have no place. The vision of its success, however, had no place in his dreams. To him the juxtaposition of many and varied materials was inseparable from a really triumphant scheme of decoration. Jewels owed a large debt of gratitude to their setting. Figured subjects should be used where they suffer no distortion of their form. The treatment of figures on a dome, unless they formed shadows in perfect outline, were not, to his mind, satisfactory. Some asserted that figures should be drawn in simple lines without modelling. His experience led him to think that they should be modelled to a considerable extent, for when the mosaic was carried out its crudity came very far short of the modelling on the cartoon, yet it added a quality of colour much more interesting than flat spaces filled in between hard black outlines. He need hardly say that the design should be in unity with the architecture. It should not belittle its details, but rather add to the expression of its parts. His idea was that no decorator, in the treatment of a large figure-subject, could afford to drop certain simple architectural forms in the actual picture which were of the highest importance as details to bind together its composition. He did not mean that details of the enclosing architecture should be reproduced or carried into the picture, but only such simple details as would give it those rigid and geometrical lines which unite and save it from chaos. In mosaic they possessed a brilliant and permanent material for decoration, but, as in the making of a fine piece of architecture or any other work of art, they must come down to the bed-rock of creation—conception, design, call it what one will; the all-important need is the man who can capture the beautiful, and has the practical sense to apply it rightly.

Mr. Bridge said that the putty need only be ¼ in. thick, and the tesseræ, when pushed in, displaced the putty and left about ¼ in. behind. The general basis of the putty he had used was lime and boiled oil, but the lime should be old—some two or three years.

Mr. Brindley said he had been greatly interested in Mr. Bell's paper, but little had been said in reference to the fixing of the tesseræ on the actual ground. All the good old Byzantine mosaics were, he believed, lime mosaics and not oil and putty, but probably they had albumen in them. Reference had been made to lime and powdered marble, but much of the lime and powdered marble that we read of in olden times was marble not thoroughly burned through. Half of it would be lime and half of it marble which had become disintegrated, so that when it was put under the rollers it was crushed up. The marble that one saw at Parma and throughout Sicily (the marble-like covering on the rough stones) was pure lime, with nothing but albumen in it. With regard to the mosaics of the Byzantine period, his conviction was that they were nearly all applied on paper the same as was done in our modern way on a cartoon. In the case of the domes of St. Mark's, what practical man would put in tesseræ by tesseræ on a large surface like that, and what would it cost if it were done? He did not think it was worth the trouble at the height of St. Mark's dome, for the different sized tesseræ were not seen; they were all practically of the same size, and the dome looked like a large copper burnished cauldron with enamelled figures on it. There was nothing to disturb the solidity of the dome. The more joints there were in mosaic the stronger he considered the work, but by the modern method he was convinced that the tesseræ would come out.

Mr. W. Woodward said, as to embedding tesseræ in cement, there were, he understood, two methods — one to embed the tesseræ so as to produce a flat surface, and the other so as to produce a series of facets; and examples of the two methods could be seen in St. Paul's Cathedral. In the cupola of St. Paul's could be seen mosaic by Salviati, laid so as to produce a flat surface; and, in his opinion, the money spent on that particular form of mosaic had been to a large extent wasted, and a similar effect could have been produced at considerably less cost. If, however, they would look at the mosaic work of Sir William Richmond, they would see that, in order to produce certain effects, the tesseræ had been placed anglewise, and the difference between the two methods was wonderful. One was lifeless and the other was perfectly brilliant, reflecting beautiful tints from the facets.

Mr. E. W. Hudson said, as an example of a mistaken attempt at a realistic representation in mosaic, he had thought of a portrait in the Brighton Museum of King George IV. Upon some 6 ft. of surface there were thousands of pieces of small tesseræ, and at some distance from the work it was difficult to tell it from an oil painting, of which, no doubt, it was a copy. Every high light, middle tone, and shadow shown by the garments of the period had been attempted in the work, and it would probably be impossible to find a greater misapplication of ingenuity and perseverance and a greater waste of time and money.

Mr. Thomas Blashill said he supposed they were all agreed that the cost of the process described by Mr. Bell was such that there was not likely to be much of it done, and that in itself was a pity, for out of a large amount of work excellence was more likely to be obtained than by a limitation of work due to extreme cost. He therefore would like to ask a question as to a modified form of mosaic work. No doubt many of them had been to the Château of Chenonceaux in France. On the left of the entrance to that building there was a formal garden and there was a parapet about 3 ft. or 4 ft. high to a wall separating the garden from the river. The inner side of that wall was plastered, and in the plaster were set patterns in differently coloured stones. That did not, of course, compete with pure mosaic—with mosaic for the whole surface, and it was very coarse, but it seemed to have an interesting effect. He did not know if that kind of work was done to any large extent, or whether any one knew much about it, or

whether it could be usefully done here, but he was afraid it would not stand so well in this country as in France. Perhaps if a better kind of plaster could be invented, and a good deal of work could be done, something might come out of that as an alternative form of decoration for larger surfaces. He had had a certain amount of mosaic work carried out, and he knew something of the difficulties referred to that night. The flat surface treatment was, he supposed, best seen in the mosaic reproduction of great pictures in St. Peter's at Rome. The mosaics at Ravenna were remarkably coarse, and some of the pieces, which looked like mother-of-pearl at a distance, were merely dabs of white paint unless they had since been restored.

Colonel Lenox Prendergast said that Mr. Townsend had referred to a point which was of considerable importance to those who were likely to do much mosaic work. According to Mr. Townsend, at a particular period a different material was discovered in which to embed the tesseræ, and it seemed to have affected design. One knew what would happen if this method of decoration was practised to any large extent; the artists would become, as unfortunately they had become in other matters, archæologists, and back they would go to Constantinople and St. Mark's. No one would disparage the great workers in Constantinople and Venice—at St. Sophia and St. Mark's. The former place was the headquarters of art, literature, and science of the time, as had been conclusively proved within recent years, and the work done then was splendid. Constantinople sent out the finest enamel, carving, materials for vestments, &c., that the world had then seen, but they reflected the work of the particular period in which the artists lived; and why should we go back and reproduce in our buildings merely what artists thought and did in those days? He did not think that should be done, and yet he was afraid it would be if Mr. Bell was to be followed. In one of the chapels of St. Mark's—the Chapel of St. Isidore—there was some very beautiful mosaic, which, however, would be condemned by Mr. Bell. What was at the bottom of the revival of mosaic work in this country was that it would wash, and that was the great recommendation of the method, and it was very desirable in this smoky atmosphere of ours to encourage the use of such a material, provided freedom of design was left unfettered.

The Chairman said that with regard to Mr. Bell's statement that the expression which the limits of the material allowed should be our guide in designing mosaic, he thought this was a truism that we could not get away from. It was shown in the different effects of certain mosaics. Take, for instance, those at St. Peter's at Rome, which were copies in tesseræ of certain old paintings, if he remembered rightly. If we compared them with the examples of mosaic at Santa Maria, Maggiore, or at St. Mark's, or at Pisa, the two things were entirely different. To any man of cultivated taste those at St. Peter's could not compare with the others. Notwithstanding what Colonel Prendergast said, he did not think they could avoid a certain amount of archaism from the material they proposed to use—indeed, the more archaic it was, the better the mosaic to his mind. With regard to gold mosaic, he agreed entirely with Mr. Bell that for external work it was not very satisfactory, whether on a plain or on a curved surface. Mosaics in the atmosphere of this country were apt to look garish, like very bright dresses on ladies on a foggy day. In India, where the sun was very bright, the colours of the mosaics were exceedingly harmonious—they were dull greens and blues and neutral tints and whites; although they were brilliant in general effect, there was nothing garish about them. As to leaving the tesserating of the design to the workmen, he could not think that that was right. The expression of the design depended greatly on the tesserating, and he did not think that a man could have his cartoon properly expressed by a workman who puts in the tesseræ perhaps from his own idea; he had seen specimens of mosaic done in that way, and the tesseræ had been higgledy-piggledy all over the surface. When he was in Burges' office (and, in fact, since, when he had had mosaic work to carry out on his own account) they used to draw out every single tessera, and show exactly where the joints were to come, and he was inclined to think that was the right way. The old mosaics were generally arranged methodically, in order to get the archaic effect which Colonel Prendergast decried. The colour of the interstices was a very important thing in mosaics. His attention was drawn particularly to this some years ago when Street was doing the Guards' Chapel. The marble mosaics there were a little higher than level with the eye. First of all they were fixed in some material—he did not know what—and the interstices and joints showed a light colour. He was charmed with them the first time he saw them. They looked like frescoes, having that "sucked-in" appearance. The colour was beautifully soft and delicate, and sufficiently near the eye to be appreciated. Some little time afterwards he found that the little figures had all these little joints taken out; they had practically been painted over with dark paint, and to his mind the effect was entirely spoilt. He was in the Guards' Chapel a few Sundays ago, and he still thought they lacked colour compared with what they had the first time he saw them. There was not the slightest doubt that the greatest difference in effect could be obtained by thickness of colour in the joints of the tesseræ. With regard to the size of the tesseræ, personally he did not like the large pieces, though that, he supposed, was a matter of taste. There was a marked difference of effect between mosaic in large pieces and that in small tesseræ. He did not mean minute tesseræ like those in St. Peter's; but large pieces of mosaic always suggested to his mind the difference between *appliqué* work and embroidery. The one was a highly refined, finished piece of work, and the other seemed an easy-going, coarse method of getting over the difficulty.

The vote of thanks having been heartily agreed to,

Mr. Anning Bell, in responding, said Colonel Prendergast rather disputed his idea of the treatment proper to mosaics. Perhaps he had not sufficiently expressed his feeling that it was not archaism. He did not deduce what he thought was the proper treatment from the old work, but from the nature of the material itself. He did not think the work could be done in any other way to make it look well. A great deal of realism could be got, but in doing that the beauty of the material was sacrificed, and only a very poor painting resulted; whereas this glassy, stiff, formal material was a beautiful thing in itself. He did not clearly recall the chapel of St. Isidore, but that fact showed, he thought, that personally he was not very interested in it. He had seen a good deal of work of that kind, and very able work too; but, to tell the truth, he rather thought that it was playing the fool with mosaic to do that sort of thing. Mr. Spence rather disputed his idea that mosaic should dominate to the extent that he thought it should. Mr. Spence thought it went well with a lot of other materials. He (Mr. Bell) did not think so. In an apse in a church it looked well with other things all around, but it must be remembered that in most cases of old work the apse was generally the best thing in the church, and, as a rule, it had been knocked to smithereens and restored, so that it was rather hard to say that one had data to go upon in saying that. He himself felt that it was very much better where there was a great deal of it. Mr. Spence also said that outside mosaics should have variety and mystery. He did not quite see how that was to be got. It would be nice, but they could not get variety outside in a bright light. The other was the right treatment, because one got a whole treatment that looked harmonious with relation to the stone and things round it. As regards the point Mr. Brindley raised, that the old work was done on the flat, and then pressed face downwards, he did not think the point of taking so long to do affected those people particularly; they had a good many centuries to do the work in, and even when they did it quickly they employed many men. He had not, perhaps, sufficiently enforced his point when he spoke of the unpleasant effect of laying down mosaic because it was so flat. He meant from the front. They could not help getting a constant variety of plane by the natural touch of the finger in putting it down. He thought that was implied, and he never did anything else. He agreed about St. Paul's that the old mosaics were very poor mosaics and nasty-looking things; but Sir William Richmond's, although they were done in an excellent manner, were perhaps a little exaggerated and a little too lofty. He had got a little too glittering and shining an effect; and, if he might dare to say such a thing, he thought the designs of Mr. Watts were not things for mosaics, they were rather florid for that kind of treatment. He was interested in hearing Mr. Townsend's point that the old mosaic was only invented in 1528, which was afterwards commented upon when we were asked why we should stick to the earlier work. He did not think it was a question of having no medium. It was simply that the earlier work could not help being more limited, the materials being so limited that it was difficult to get outside them. When once they got a chance of doing clever things they did them. It was just the same as in all other things. The history of all other art was, first of all, that a savage man must have a pretty strong impulse to want to do anything at all, except kill other people and get things to eat; he did not know much, and had to fumble about, and slowly he acquired the power to express his ideas. While it was difficult to express his ideas, he wanted to express them to the best extent, but it was so hard that he was pretty careful about the ideas that he expressed. But when he got easy with his material he wanted to do things that were clever in it, and to do things which were hard to do. And so every art almost rose and fell in that scale. He did not want to take the early mosaics (of which he approved) as being the only examples to follow, because they were of that period. He did not wish to say that the later ones must not be followed because they were later, but because he did not like them himself. He thought the later ones went wrong because they did not try to do what the mosaics did so well, and that the earlier ones kept within limits, partly because they did not know any worse! We should look at the stuff and see what it can do, and then do all we can with it, but we should not try to do more than we can do. It was interesting to hear Mr. Crane's remarks about the cartoons being reproduced in work that he had done. He agreed that it could be done, but all the same, in his opinion it was not a desirable method; and he felt he was rather at issue with the Chairman there, as he (the speaker) was of opinion that the workmen should be given some play along with the artist. Workmen differed so much in their power of carrying things out that one soon found out which of them could do the better work and which the easier work, and one could allot the work accordingly. And then there was a kind of variety got. Then there was one other point. Mosaic was not against realism, but he thought that it showed the advantage of not being able to get realism—that mosaic was one of the very few arts in which one was forced by the necessity of the material and the limitations of the material to a rather higher plane of thought, or at any rate into somewhat lofty subjects which could not be expressed by clever interesting execution. It meant the plain verities of simple facts: Time, the Judgment, Life—those things were best treated in something which could not remind one of other clever things in the same material. It had just got to be austere and definite—a sort of raw presentation only of the idea, with no draping or ornament to it. Mosaic did that, and so it was peculiarly useful for religious work.

The Chairman announced that the next meeting, on December 2, would be a business meeting, when the election of candidates for membership would take place, and the results of the November examinations would be made known.

Mr. Lacy W. Ridge has given notice that he will move a resolution to the effect that the Royal Institute of British Architects desires to thank the Local Government Board for the issue of model by-laws iv. (Rural Districts), but while doing so the Royal Institute would urge on the Board the desirability of preparing a model to enable Rural District Councils to regulate party walls as distinct from external walls.

Mr. H. W. Wills has given notice that he will move the following resolution: "That in the interests of the profession it would be advisable to have a list of Institute assessors drawn up from whom the President would nominate, and that this list be from time to time revised."

The meeting then terminated.

THE ARCHITECTURAL ASSOCIATION.

An ordinary fortnightly meeting of this Association was held on Friday last week in the Meeting-room of the Royal Institute of British Architects, No. 9, Conduit-street, Regent-street, W., Mr. G. B. Carvill, Vice-President, occupying the chair in the unavoidable absence of the President, Mr. W. H. Seth-Smith.

The minutes were read and confirmed, and the following gentlemen were elected members, *i.e.*, Messrs. E. S. Barr, J. C. Bucknill, F. Bisset, W. J. Delbridge, J. H. Goodchild, C. L. Hampton, G. O. Howship, A. S. Jones, E. J. Kallenborn, E. G. Millar, D. W. Pollock, E. Pitt, H. Sandford, W. J. M. Thomasson, A. H. Whyte, and E. H. Walker.

The Chairman then nominated Mr. R. H. Weymouth to fill the vacancy caused in the Committee by the appointment of Mr. A. T. Bolton as head-master of the Day School. The election will take place at the next meeting.

New Premises Fund.

The Chairman said it was his pleasing duty to announce the following list of donations to the New Premises Fund, *i.e.*, Mr. J Macvicar Anderson, 25*l.*; the late Arthur Cates, 25*l.*; Mr. Henry L. Florence, 25*l.*; Mr. Arnold Mitchell, 20*l.*; Mr. Aston Webb, A.R.A., 20*l.*; Mr. E. A. Gruning, 10*l.*; Messrs. Alfred Waterhouse, R.A., and Paul Waterhouse, 10*l.*; Mr. A. Brumwell Thomas, 5*l.*; Mr. William Emerson, 5*l.*; Mr. T. M. Rickman, 5*l.*; Mr. W. Howard Seth-Smith, 5*l.*; the late William Young, 5*l.*; Mr. J. A. Gotch, 3*l.* 10*s.*; Mr. Reginald T. Blomfield, 2*5l.*; Mr. G. H. Fellowes Prynne, 2*5l.*; Mr. A. E. Street, 2*1l.*; Mr. Ronald P. Jones, 10*l.*; Mr. A. T. Bolton, 10*l.*; Mr. Walter Emden, 5*l.* 5*s.*; Mr. W. L. Trant Brown, 5*l.* 5*s.*; Messrs. C. J. Blomfield and A. C. Blomfield, 5*l.* 5*s.*

The Sanitation of a Country House.

Mr. Max Clarke then read the following paper on "The Sanitation of a Country House":—

I have been wondering since the Committee of the Architectural Association asked me to read a paper on this subject whether they paid as great a compliment to the members as they did to me. That, I suppose, must be settled by each member for himself. As a rule, "sanitation" is looked upon as a matter to be got over with the least amount of trouble possible. When I say this you must bear in mind that I do not pose as a sanitarian; I simply look at this branch of the duties of an architect in the same light as I do any of the multifarious matters he is called upon to deal with for the usual 5 per cent.

Let me tell you how it came about that I was led to think seriously of the particular matter under consideration this evening. Many years ago I was walking through the streets of a provincial city with a friend; he had with him a clerk of works, who was engaged upon some of the buildings in course of erection, and had been upon others. Pointing to a pipe against a wall, this gentleman said, as well as I recollect, "The authorities are under the impression that is a ventilation-pipe, but I just stuck the end of it into the ground, and it looks all right and does no harm." This remark made a great impression upon me, as I could not help turning over in my mind, were the authorities at fault in asking for a ventilating-pipe or was the man at fault in so deceiving them. I always hope the architect knew nothing of the transaction, but he should have done so if he did his duty.

Now, gentlemen, let me for a moment substitute the word "hygiene" for "sanitation." The explanation in a dictionary of the word "sanitary" is "pertaining to, or designed to secure health," and of the word "hygiene" "the science which treats of the preservation of health." There does not seem such a difference between the two definitions that I might not substitute the latter for the former word. Now I must ask you to turn with me to the introduction to Parkes' "Hygiene"; the first paragraph is as follows:—"Hygiene is the art of preserving health—that is, of obtaining the most perfect action of body and mind during as long a period as is consistent with the laws of life. In other words, it aims at rendering growth more perfect, decay less rapid, life more vigorous, death more remote." This paragraph I consider the most admirable definition of "Hygiene." I should like to read to you the whole of the introduction, but time will not permit, and I can only suggest that each member, at least each junior member present, and also those who may look over this paper in print, should carefully read over and consider the whole of this introduction to Parkes' "Hygiene."

Just fancy for the architect what the above paragraph means; that each one has it in his power to assist in such an endeavour, which, if carried out, would alter in a great measure the whole state of mankind, because that is what it really means, "the most perfect action of the body and mind." Is this not what we are all aiming at in various ways, or should be? Now, let me ask, how many of the architects in the United Kingdom have a copy of this particular work in their library? How many have given it the consideration it deserves, or deem it one of the main objects of their lives to further the objects it treats of? If I can only bring *some* of them, and particularly some of the rising generation, to realise that "The Art of Architecture" embraces such a duty to the whole of mankind, I shall have accomplished something. There are many different views as to what the duties of an architect are. They seem to me largely to turn on how much an architect should do or can do for 5 per cent. Lengthy articles have been written on his duties as an arbitrator and such like, but where does one read of his duties in rendering growth more perfect, decay less rapid, life more vigorous, and death more remote.

The other day the address of our President contained a paragraph to the following effect:

"It is a fault in our training that our pupils are not on the works enough, and that we do not specialise enough. Highly trained men, with a diploma from a guild or an institute or what not, ought really, if our building is to be of our best, to confine themselves to design and the supervision of building construction, and not to meddle with surveying, valuations and dilapidations, bills, &c., work which certainly does not savour of art."

Might he not have added to the list "sanitary engineering." It really is a most difficult matter, at least to my mind to decide what we should do ourselves and what leave to others; for my own part I see nothing wrong in employing another man to do that for me which I know he can do better than I could myself, the only difficulty to me is, who is to pay him? Personally I feel I should, if I undertook to do work for such and such a percentage, and if I were quite sure that my client got the advantage of the best information on the subject.

Now you may say, what has all this to do with the "Sanitation of a Country House" and my reply is this, that I look upon the title of the paper from the very broadest point of view, it not only concerns the drains and pipes, but it deals with almost the whole structure from foundations to roof-tree, and it is only by an architect having in view the benefit of the whole community at large, that he will have fulfilled his duty to mankind in general and his client in particular, not to speak of himself. It does not signify what the matter in hand may be, he is morally, if not legally, responsible for the result of his work, whether in fact it is a benefit to posterity or the reverse. I do not think this view of the case is brought home often enough to architects, and I take this opportunity of pressing it upon the younger members of the Association; for it is to those I am here to speak, the older ones I hope know as much about sanitation and hygiene as I do myself, whether these two items always get the consideration they deserve from men in practice is a question.

My friends say that I am very prone to deal in facts, when generalities would in their opinion answer, and my reply is that I think the more one gets to what some call "rock bottom" the better will our work be, whether it be as an art or profession, so I am going to give you a few instances of cases which have come before me. Some few years ago I had something to do with a building where the architect had, I presume, great confidence in his clerk of works and foreman; at any rate, they were given a plan of the drains; it was neither very good nor very bad, and the work was done. A short time afterwards, from various causes, the drains were overhauled, and it was found that there was one length of 9-in. pipe into which several 6-in. pipes were branched, and on the 9-in. pipe, between each of the 6-in. branches, a 9-in. syphon trap was discovered, each trap being quite blocked up with soil; so far as I recollect there were five traps in a length of about 60 ft.

I heard of a case the other day, equally interesting, but from another point of view. A house in the country—fortunately I do not know either the neighbourhood or the architect—built not long ago, lately from some cause the drainage had to be examined, and was found to be defective. An architect was of course employed to put matters right, and his way of doing it was to write a letter to a builder instructing him to test the drains and put in new where he considered necessary, no supervision beyond a casual inspection being exercised over the country builder or what he "considered necessary."

I need hardly tell you my point is, that papers might be read here and elsewhere till doomsday without any practical result, unless men take a different view of their responsibilities from those I have just quoted.

Having pointed out to you what I consider the responsibilities of an architect are in connexion with sanitation, it now remains to get an idea what are the sanitary requirements of any house, as I do not believe we should build any worse for the poor than we should for the rich, so far as sanitation goes.

We need not consider site, aspect, or prospect, as it seldom falls to the lot of an architect to decide on the first, and any man worthy of the name of architect would deal to the best of his ability with the two latter items, on which there is plenty of information to be had, and they are not matters which require supervision.

Subsoil Drainage.—The lie of the ground requires most careful consideration, and the drainage of the subsoil, if such is required, always bearing in mind that it is better to lay land drains so that they will convey water *away* from the house than towards it. I mention this, as I saw a scheme a little time ago arranged to convey all the subsoil water in a pipe under the centre of a house when it would have been quite possible to take it away at the sides of the house. Land drains or agricultural pipes are liable to get blocked up at times, which should be borne in mind when laying them. The general drainage I shall speak of later.

Foundations and Concrete.—The foundations should receive careful consideration even in the country, taking care in a clay district to carry them well down beyond the level which may be affected by droughts; if this were done we should not hear of so many cracked buildings and under-pinning jobs, which, though money-making for the architect, are not pleasant for the client.

In connexion with the foundations, let me remind you that Portland cement requires more examination and attention than it usually receives from architects. I find it very difficult to get it sufficiently air-slaked—or, in other words, it is, as a rule used when it is too fresh; it sets so rapidly that it is partly set before it is used in brickwork, drain-work, or concrete, and if knocked up again of course it is not the least use; it is also more likely to blow or expand when used fresh, accounting for the number of stone-ware pipe-collars fractured which are to be met with.

Damp Courses Over Area of Buildings.—Covering the area of buildings with Portland cement concrete, as required by many authorities, is for the purpose of keeping down ground damp, which, where there is no concrete or other damp-proof course, is liable to be drawn up in the building when the latter is heated, the damp or noxious gas sometimes coming from great distances where the earth is light or porous. In this way sewer gas may be brought into a building from defective sewers existing at a considerable distance. In order to prevent this, care should be taken that the cement is sound and slow-setting, and that the concrete is not porous; the aggregate not being too large, such for instance as brickbats, which one often sees in concrete. The surface should be well beaten down and smoothed over with a shovel so as to form an impervious face, even if the concrete is only to act as a damp-proof course, and not as a floor.

Damp Courses.—Damp courses in walls should receive great attention. The very old-fashioned clause to be found in specifications, "two courses of stout old slates bedded in cement," should, I suggest, be abolished, as it is most difficult to get stout slates, either old

or new, the usual type being so very thin that they break easily and are often damaged before the wall is built upon them. Asphalt often suffers from being laid upon the walls and then used as a gangway by the men on the works, or is otherwise damaged by moving materials upon the walls before the brickwork is continued up over the damp course. Whatever the material may be, it should be carefully protected until the superincumbent walls are built, then we may assume that we have done all that can be done to ensure a perfect layer of material to prevent damp rising. I do not give an opinion as to the *best* material to use, only care should be taken in its use. In connexion with damp courses and floors, I doubt if sufficient attention is paid to cases where there are wood floors with a space under, one side of a wall and tiles or mosaic with concrete under at the other side. Then some precaution is required to prevent the damp getting from the earth and concrete on the side of the wall to the flooring and timbers on the other side.

Numerous methods can be adopted, but they are usually conspicuous by their absence.

Vertical Damp Courses.—Vertical damp courses or dry areas are most important to rooms underground. I do not think there can be any doubt that, where a wide area cannot be obtained, covering the external face of the walls with a double thickness of asphalt is the very best means of keeping out damp, the asphalt forming a horizontal damp course at the bottom and extending vertically above the level of the surrounding earth. My experience of hot compositions poured into a cavity in the wall is, that such care is necessary to prevent mortar droppings getting down, and to ensure the hot material getting down and adhering to that already in, I shall not risk it. The external application I can see and examine, the internal I have no means of knowing whether it is in as it should be or not.

Ventilation under floors should be attended to, sleeper walls being built open to allow of currents of air through the open spaces; one forgets at times that putting in an air brick to the space under one room and carrying up the brickwork close under the floor all round without any openings other than the one is not "ventilation," it is only leaving a hole. All holes made in walls should have a fall outwards to prevent wet being driven in.

Bedding wall or pole-plates in main walls at the ground level is a mistake, they should always be carried on corbels, piers, or independent walls. In connexion with this, I think hoop-iron, well tarred and sanded, is to be preferred to wood wall-plates.

Walls.—With regard to walls, what shall I say? That you should avoid, if possible, using 9-in. walls. It is not sanitary work, in my opinion, to builda house costing, say, 2,000*l.*, all the outer walls being 9-in. brick; and particularly when the bricks are porous, as so many are nowadays, put together with poor mortar, and not even damped before laying. Of all the simple requirements in building, I do not think there is any single one I have so much difficulty in getting carried out as wetting the bricks well before they are laid; if this is not done the dry brick absorbs all the moisture out of the mortar so rapidly that the material is little better than dust or dry mud. Hollow walls require attention to see that the cavity extends below the level of the internal damp course; also that mortar is not allowed to drop down the cavity and rest on the wall, thus forming a means for the damp to pass from the exterior to the interior lining of the wall. The lead covering of lintels or arches over openings in hollow walls require attention to ensure the ends of the lead being welted and turned so as to direct the moisture to the outer wall.

I have had some experience in building with granite, and I find it is a mistake to allow through or bond stones to extend to the inside face of the wall, as damp patches are usually found where the ends of these stones come. This is, of course, where neither brick lining or "strapping" (the Scotch term for battening and plaster) are used.

Roofs.—Some points in roofs require attention; one of the most important, to my mind, being in cases where eaves gutters rest on the tops of walls or on oversailing courses. It is a practical impossibility to make a cast-iron eaves gutter perfectly watertight, therefore short lengths of lead should be fixed on the top of the walls at each joint in the gutter to take the water which escapes from the joint away beyond the face of the wall, not allowing it to percolate into the brick and stone, and so form a very unsanitary spot, as well as an eyesore on the inside. These pieces of lead should be welted at two edges, and of the other two edges the back should be turned up and the front edge turned slightly down where beyond the outer face of the wall.

Down pipes are, as a rule, too large and too numerous in most buildings, where gulleys have to be fixed at the bottom of each stack, involving unnecessary drains and extra work clearing out, &c. The pipes should always be fixed so that they are clear of the walls in case of leakage.

I would suggest that "soakers," which are more usual in the north than in the south, are better in every way than either secret gutters or flashing, the cover flashing being less liable to damage than flashing laid on roof slates. Soakers also make a good finish to hips where the taste of the architect does not permit of hip tiles, slate, or lead coverings; the slates can be cut to a close joint down the angle. Slates of a greater width than the ordinary size should be used in these positions, so that no very narrow strips or small angle pieces are used, as these usually have only one nail or peg, and are very liable to get broken and fall off.

I think two courses of slating battens, the lower one vertical and the upper horizontal, is a good method of obtaining an air space in roof construction, and so rendering the interior less liable to be affected by changes of temperature. Felt should be clearly specified and examined as to quality, the cheapest, which is often seen on work, is not a desirable article.

Silicate cotton or slag wool is a most admirable non-conductor, as well as being a sanitary material, to be used in almost all cases where hair felt is so often used, the latter being a happy hunting-ground for all sorts of vermin, whereas the slag wool is, to them, most objectionable; this applies to roof coverings, pugging in floors, "lagging" or covering pipes of all sorts, and all the other purposes a good non-conducting material is used for.

I need hardly refer to the fact that the common floor with wood joists, floor boards and ceiling plastered, is not a "sanitary" floor, but it will be some time yet before we can get a solid floor of any sort used in country houses even of the better class, so I need not go into the difficulties of any of the varieties, either as to cost or execution, but I may say with regard to partitions, that I think the stud partition, of "quartering" plastered both sides should be consigned to the past, porous and pumice bricks, breeze concrete, perforated and solid plaster slabs and solid plaster on expanded metal are all so much superior that their use should be universal even in country houses. Building the tops of chimneys in cement and the insertion of proper damp courses in them should be a matter of common practice, but I fancy more attention is often paid to the problem how to get a chimney to draw, or not to smoke, without recourse to a chimney pot, than to whether the damp course has been properly put in.

The architect who has been called in once to *try* and cure a bad case of "dry rot" in a house will, I imagine, need no reminder as to the necessity of making provision against such a misfortune arising in one of his own buildings, or one who has lived during a cold winter in a country house with no means of heating the hall or passages, he, I fancy, will bear in mind the necessity of heating arrangements, the nature of which we need not discuss. I would only say avoid any system which combines heating and a supply of hot water for domestic purposes, unless the former be of the most limited description.

Windows.—The height of rooms, the lighting of them by suitable windows, and if no fireplaces are provided, some means for the air to escape, I shall not venture to use the word ventilate in connexion with this, even the cistern rooms should be well lighted; although the water is not the better of any light. The height of the windows with relation to the floor and ceiling requires attention, many of the building regulations having claims on the subject, and it is not a pleasant experience, when a picturesque window, or, mayhap, several of them, have been arranged in the roof, to receive a polite request from the authorities to alter so as to conform to by-law so and so.

High bottom beads or rails to double hung sashes as a simple inlet for air are not made use of as often as they should; they also form a very excellent stop to prevent wet coming in at these points when heavy gales blow directly on windows, as is so often the case in exposed situations in the country.

A splayed notch on the outside of the bottom bead is an additional safeguard against water, but do not cut the notch upside down, as illustrated in a well-known work on specifications—evidently a slip, but still liable to be copied by the beginner.

I think we may now turn to the matters which are more usually known as sanitary. It is really to impress upon you how many sanitary items there are which require your personal attention and which you cannot hand over as a P.C. amount to your pet sanitary engineer. He, poor man, if he is a little above the average, may tear his hair when he finds water-closets, baths, lavatories, and sinks dotted about all over the plan, causing him the greatest difficulty in dealing with the arrangements, if (and bear in mind I say "if") you have not given the matter the consideration it requires from the first.

We shall presume all things are in order and the water-closets are grouped fairly well in one part of the building, as few outlying ones as possible, baths not over rooms where the flow of water from a quick waste will disturb the occupants of rooms below, also where, if leakages occur, as little damage as possible will be done.

All these things are in order, and we shall now consider the fittings and drains.

First of all, let me assure you that the more simple the fittings are the less future trouble your client will have, and that is a matter of some importance in outlying country districts. I spend a short time every year at a house where, if a plumber is required he has to be brought a distance of seventeen miles—about seven by rail and ten by coach. This is enough to make one careful that the taps do not require washers or the water-closets new seatings more often than is absolutely necessary.

Taking the important item of water-closets, I should advise in all cases a wash down or pedestal basin, and, in saying this, I know I lay myself open to criticism, but I have been through all the points of noise and flush and non-cleaning and comfort and habit and all the rest of it, and am still of the same opinion. As to the particular type I shall not say much. I think it should not be what is called "large area" water surface; I do not think the clearing of these is at all satisfactory, even with flushing cisterns of larger capacity than we are allowed to use in London as a rule.

I also think the basin you select should have the most simple joint to the soil-pipe that can be obtained, consistent with perfect water seal or air tightness, depending upon the position of the joint; in fact, I desire a perfect joint which any handy man can make, as the basin may be broken any day by careless use or accident. The back, of course, should be straight, and the flushing rim, if it is of that variety, should allow of a good body of water falling all round. Seats should always be of hardwood in two thicknesses, preventing the warping and cracking which seats made of one thickness are always liable to. The water-closet should be fixed so that the flushing cistern can be placed immediately over the inlet arm; the old-fashioned position back to a window is the worst for a water-closet worked with a W.W.P. or flushing cistern. The seat should either have rubber bosses fixed on the underside or iron bearers projecting from the wall, leaving the floor clear for sweeping; the hinges should be brass pivots and plates fixed to the edges of the seats at the side—not butt hinges, which are very usual. Every water-closet basin should be white; printed basins hide dirt.

One point in connexion with the W.W.P. which does not receive the attention it deserves, is the rate at which it fills. I put in specifications that it is to fill in a minute and a half, which means that with a low head of water a ¾-in. ball valve must be used, and as this costs a little more than a ⅝-in. ball valve, it is not always used when it should be. As far as my experience goes a perfect flushing cistern has yet to be invented, so I shall not offer you any advice upon the sort to use except the fewer the working parts the better. The shell, if of cast-iron, should always be galvanised; wood lined with lead are best in some situations, both on account of quality in the water, and not so liable to damage from freezing. I think a chain or for the better qualities a brass rod, *not* in a slide, the best

form of pull, a stop cock on the water supply to each flushing cistern is an advantage when repairs are needed; the position of the arm for connecting the antisyphon pipe is of some importance, and the method of connecting the pipe to the arm when the latter is of any stoneware type, is a difficulty sometimes not satisfactorily dealt with, therefore I am inclined towards a lead trap to which the antisyphon pipe can be wiped, as the best way out of the difficulty. If a valve closet must be fixed, use a good one; cheap valve closets with flimsy parts and badly finished brass work require repairs frequently, and seldom repay for the small saving in the first outlay. A lead tray should always be fixed under these water-closets in case of leakage from the valve, with a weeping-pipe to the outer air having a copper flap at the end to prevent wind blowing up the pipe, and the same applies to the overflows from all cisterns and flushing-tanks. Care should be taken to make the wood fittings in connexion with these water-closets easily movable, and clear of plaster work and the like.

Baths.—I do not think I have any particular remarks to make as to baths. Whether porcelain, cast-iron, or copper be used, must always be a matter of individual taste; the first-named is always difficult to heat if a hot bath is required. Copper is the best in this respect, but a good one is always expensive, and requires stout cradling to prevent it being put out of shape.

The bath fittings should, in my opinion, be of ample size, so that the bath can be filled rapidly, and I lean towards valves or taps which are quite distinct, the hot supply from the cold, and the nose projecting well over the edge of the bath if not actually inside (which is a modern improvement), very useful in case the valve leaks at the stuffing box or union. Lead safes are useful where the baths are enclosed, but the best types of baths do not require enclosures, and with these lead safes are unsightly. A tile or mosaic floor being preferable, or perhaps a sunk marble slab if funds will permit.

The wastes from baths, sinks, and lavatories, should be ample in size to permit of quick discharge, and the outlets should be of sufficient area to properly fill the waste-pipe. The latter should, in my opinion, discharge into an open head outside, so that the traps may not be syphoned out. I think this a better method than having long continuous wastes fitted with antisyphon pipes.

Lavatories and Sinks.—The number of lavatories and sinks from which we can select is so large that all tastes are catered for. Those having complicated fittings should always have lead safes under in case of leakage. Enclosures are to be avoided, as they become receptacles for dirt and objectionable things in general. Every fitting of this nature should have a proper overflow. I have had considerable trouble with sinks for hot water washing-up, in cases where glazed ware was unsuitable, and have tried wood lined with lead, zinc, and tinned copper, but they all proved practically useless in a very short time, in cases where there was much washing-up to be done with hot water; 2-in. teak put together with red lead, galvanised bolts and brass screws being the only form of sink suitable for this class of work; in this case I have had the waste plugs made hollow and of sufficient height to form an overflow. Care should be taken to have a proper grating in the waste washer, which can be removed but not *too* easily taken out, otherwise it is never in its place and pipes get blocked up. Angle strainers in sinks are a useful addition in this respect, if the domestics can only be induced to make use of them.

The vexed question of housemaid's sinks should be considered; what its use should be and to what extent they should be provided. Except in large houses I consider that a water-closet should be used for emptying the slop-pails into, but when a slop sink is required it should resemble a water-closet, not have a grating or anything of that nature to the outlet; the latter are only suitable for fixing under hot or cold draw-off taps, which should be provided in the housemaid's closet; the latter should be light and airy, not, as so many are, in some corner, deficient in everything except dirt and smell. If a real slop-sink is provided it must be fitted with a ventilated soil-pipe and antisyphon-pipe, exactly as a water-closet would.

All sinks should have high backs or some other means of preventing the wall or enclosure from getting wet; slabs of marble, tiles, rendering with Portland cement, all answer the same purpose. No space for water to trickle down should be left behind sinks of any description.

Traps.—Usually of drawn lead, should be fixed under *all* fittings; with brass cleaning screw, the latter having a square or oblong projection for unscrewing, *not* a couple of small holes, or an indentation requiring a special tool to unscrew it. A little time ago, I spent an hour with a plumber getting out a screw cap to a sink waste; if it had had a projection to fit a spanner, it could have been removed in one minute.

With regard to fittings generally, there seems to be a great laxity amongst men who do this class of work—both those who specify and those who execute—as to connexions between fittings and lead pipes; these should always be made with "unions and flynuts;" as a rule, the "union" portion is omitted, say, for instance, connecting a stop-cock; more often than not, both ends are simply "tinned" and the joints wiped; so that to get the cock off for repairs, the pipe must be cut in two places, and two new joints made when it is refixed. If proper unions were fitted in the first instance, they could be unscrewed, screwed up again without damage to pipes or fittings, or a useless expenditure of time. I shall only direct your attention to one other point in connexion with fittings, the word "self-cleansing," now in such common use. It would be well if all architects and, indeed, their clients also, would understand that this term does not mean that the particular fitting will keep itself clean, but that there are no corners, or angles, or the like, where dirt can accumulate. Baths, lavatories, sinks and water-closets particularly require "elbow-grease." The daily application of a closet-brush to water-closets would prevent such filthy traps as are on exhibition in too many houses of even the better class.

The supply of water to any house, country or otherwise, is a matter which should receive careful attention, but more particularly in the country. Very often the difficulties are increased by the supply being limited from various causes, such, for instance, as want of power to pump the water up to the required level. This is too large a matter to deal with to-night, beyond saying that the Canadian type of windmill, hot air, and petroleum engines, and also the hydraulic ram, all serve the purpose when natural gravitation is not available.

Pipes for water service should be considered, with regard to the nature of the water, particularly in some localities where both the water and the earth may cause deterioration of lead, the water thereby being contaminated occasionally. I show you a piece of lead pipe taken from a house near Bedford some time ago, the exterior eaten away by some action of the earth in which it was laid, some hundreds of yards had to be renewed in this case. I laid some lead pipes in the neighbourhood in trenches which were filled with sand and gravel, with which the pipes were surrounded to prevent damage from the above cause. Lead lined with tin, or iron lined with glass are very good, but are expensive, and the former require special joints. The storage of water is, of course, a debated point. Personally, I am for storage, as I consider it can be carried out with very little fear of contamination, and it saves many a trouble when there is a hitch in the supply. In a country house, a supply of water for drinking and cooking purposes can be stored in a glazed stoneware tank (if a slate or galvanised iron one is not considered good enough), either white or buff, which, with occasional cleaning, is about the most sanitary article which can be obtained. The general supply can be stored in a galvanised wrought-iron cistern, or cast-iron, or steel plate. If the size is large the wrought-iron should never be less than $\frac{1}{8}$ in. in thickness; many are so thin as to be useless in a very short time. I have found it an advantage when a galvanised cistern is used to have it thoroughly cleaned out when all the connexions are made, and then to paint the inside twice with Portland cement, mixed with water to about the consistency of paint; this preserves the galvanising and covers many of the little projections left in the process.

I need hardly remind you that close-fitting covers to the cisterns are essential; that the cisterns should, if possible, not be placed where the water is liable to freeze in cold weather. Near a chimney is a good position, other matters being equal. Ease of access should be considered for cleaning out, and safes under are always advisable in case of accidental overflow. The position of outlets deserves attention. They should always be in the side of the cisterns, so that dirt cannot get down the pipes, and if a supply is taken off for hot water, it should always be taken out of the cistern *below* the general cold water supply, otherwise there is danger of leaving the hot water system without water in times of scarcity. Stop-cocks, with unions and large wheel-heads, so as to be easily turned, are necessary. Wrapping the pipe with slag wool made upon canvas is desirable, and where casings are fixed they should be easily removable, not nominally so, as is so frequent. One further point with regard to cisterns. There are some on the market which are intended for use as a reserve only, the supply under ordinary circumstances coming direct from the service-pipe and not passing through the cistern. I am not in favour of this arrangement, as the water might be in the reserve for so long a period that its use might be undesirable. I think we may now turn to the soil pipes and drains, dealing with the former first. Naturally lead is the most suitable material, except in cases where large quantities of hot water alternating with cold have to be dealt with; under these circumstances cast iron is more desirable, as the lead is buckled and at times cracked by the alternate heating and cooling. The connexion of the foot of the soil pipe to the drain is often not carried out as it should be; if the soil pipe be $3\frac{1}{2}$ in. in diameter, and there is no necessity for it being larger, the brass tail pieces usually sold have such a narrow flange that it will not bear on the collar of the pipe, but slips right down; a wide flange bearing all round on the stoneware socket should be specified and insisted upon; the tail piece should be lined with the lead pipe the whole length, the latter dressed over the flange all round, and the joint wiped round the top edge; the whole length of the tail piece should show above the ground level, and the joint to the drain be made with cement well flaunched and trowelled hard.

A sufficient number of tacks should be put to lead soil-pipes, not less than every 5 ft., in pairs on both sides; bends should, of course, be avoided where possible; the soil-pipes should be carried up to a sufficient height to ensure the gases coming from them being taken away clear of windows and ventilators, but *not* up the side of chimneys finishing close to the chimney-pots, in which case there is a great probability that as the air from the drain comes up the ventilating-pipe it will go down the smoke flue, in many of which there is a down draught except during the time there is a fire actually in the stove. Guards of some sort should be fixed on the tops of soil-pipes to prevent birds building, leaves, &c., getting in. Branches into soil-pipes should be arranged so as to avoid joints being in the thickness of walls, and the connexions of water-closets to the branch pieces should be carefully attended to. So much has been written about drains and drain-pipes that I fear you will be weary of the subject. As a rule the drains are a simple matter, if one only could get perfect joints, and it is to improve these that so much attention is directed at the present time. Certain points should always have careful attention; for instance, where there are separate soil and rain-water drains the former should always be laid below the latter. If the rain-water be stored for use, the joints of the pipes conveying it should be most carefully made, as it is possible for water to get *into* the pipes from the surrounding earth, as well as to get out and the quality of that getting in, may be very objectionable. One of the chief difficulties in laying drain pipes is to get a true alignment at the joints, so that each pipe may be quite concentric with those adjoining. With the ordinary joint this is a matter entirely depending on the skill of the individual who lays and joints the pipes. The cement exuding when the pipes are pushed up together is another difficulty; careful wiping out of the pipes at each joint being the only remedy for this most frequent defect. To obviate these difficulties some use gasket or hemp bound round the end of the spigot, to make the end of the pipe fit close and concentric; but I think the pipes with a ring of composition on the spigots and sockets and a cement joint outside is the best method of avoiding difficulties of this nature and taking a great responsibility off the man who actually lays the pipes. The con-

crete on which the drains are laid is a matter on which much difference of opinion exists. One of the latest text-books advises a bed of concrete about 6 in. thick, laid to a regular fall, on which the pipes are to be laid, the space under the body of the pipe then being packed up with concrete. I do not consider this a good plan. I suggest that a bed of concrete 6 in. or 8 in thick be laid with indentations at regular intervals for the collars of the pipes, allowing room enough to make the joint. The whole length of the pipe bearing on the concrete render the lengths much less easily knocked out of position by accident. When each length is completed a benching at the side, up to about the middle of the pipe, is sufficient. Except to resist external damage, there is no object to be gained in surrounding pipes entirely with the ordinary concrete, which is of too porous a nature to keep in any sewer gas or air which may escape from defective pipes or joints. Of course if a pipe, surrounded with concrete, say 18 in. or 20 in. square, is to be looked upon as a beam, then it is superior to a pipe with benching up to its middle only; but I think we should always try and get a sufficiently good foundation for our drains to enable us to abandon the beam theory. It is, of course, necessary to protect pipes from shocks of heavy vehicles passing over them and such like. The concrete should be properly made with clean material, and where the earth falls in upon it when the pipes are being laid, it, viz., the earth, should be carefully cleaned off the surface before the additional layer of concrete is put down, otherwise there will be two distinct layers not connected with each other.

I do not think I need trouble you with any remarks as to the size of drains, their inclination, whether they should be stoneware or cast-iron, these are more matters of office routine which can be decided to suit the circumstances of each particular case. If we turn to the construction of manholes or inspection chambers, a few remarks are necessary. If built of bricks I do not consider footings necessary to the walls; in ordinary earth, a slab of concrete extending to the external face of the wall is sufficient. I prefer rendering the interior with Portland cement, to the white glazed brick; the joints in the latter take away any benefit gained by the glazed surface of the brick. Some say that hot water damages the rendering, but as hot water does not often rise above the benching, I have not found the damage occur; the benching should be steeper than is usual, and of a convex section, so that the solids washed upon the inclined surface may slide into the central channel. The objection as to this form being inconvenient to stand upon and so on, need not be considered. Manhole covers should always be galvanised, it is quite worth the extra cost. In the country where every manhole would be out of doors and not close to the house, the airtight quality of a cover is not of so much importance as it is in towns. Turning to what is usually called the "air inlet," I think that unless it can be placed in an unfrequented position, it should always be carried at least 8 ft. high, without any mica flap or valve of any sort, these are a delusion, they get out of order so easily, and their use as at present in towns, will not continue very long. It is an accepted fact that there is an up current in most ventilated soil-pipes under ordinary circumstances, but where a water-closet on the soil-pipe is used, it reverses the current for the time and drives the air out at the first available outlet, which is usually the so-called "inlet." For this reason, particularly in towns, the inlet should be carried up above all windows and the like, but in the country, a pipe the same diameter as the drain taken up say 8 ft. with a bend and wire guard at the top to prevent leaves and so on getting in, is quite sufficient, perhaps more than sufficient some will say, and advocate a grating, say 18 in. square, close to the ground level. I need hardly remind you that overflows from rainwater tanks should not, under any circumstances, be connected to soil drains, nor do I think surface water drains should, even with traps fixed on the outlet, unless some length of open channel intervenes between the trap on the surface water drain and the connexion to the soil drain.

Sewage Disposal.—In many districts the disposal of the sewage of a country house is a great difficulty where there are no sewers in the neighbourhood and the pollution of streams is very properly objected to. In such cases it is perhaps desirable to consider the advisability of having a separate system of drains to take the wastes from baths, lavatories, and fittings which do not take solid filth; with a tank, the contents of which can be used for watering gardens and the like, this would greatly reduce the amount of liquid to be dealt with. The sewage, or excremental filth portion, can then be dealt with by some of the forms of bacterial treatment, known by the various names of bacterial filters, septic tanks, and such like. From what I have read on the subject, it seems to me that the treatment should be a form in which the sewage is passed first through a closed tank, and then through filters exposed to the light. Time will not permit me to go into the various methods advocated. I would remark that I heard of the arrangement now known as the bacterial tank from a member of the Architectural Association a good many years ago, as Mouras' Automatic Scavenger, a description of which can be seen in the Proceedings Institute of Civil Engineers:—

Vol. 68, page 350, 1881-2;
Vol. 72, page 359, 1882-3;
Vol. 78, page 502, 1884.

From these notes I had a scavenger constructed in the latter part of 1893 at a private house I was then building, in the hope that it would render the sewage less offensive. This it has done most effectually, and although I cannot claim for it that the effluent is by any means clear, it is not offensive. The tank has never been touched during the last eight years, and the last time I examined the drains they were quite clear and no solid matter had passed out of the chamber, showing that the solids had been broken down as anticipated. Since then I have advocated its use at my lectures on sanitation, and I know other tanks have been installed from the advice I gave, so that no patent rights can be claimed for this portion of the arrangements which are now before the public. I show you a diagram of an arrangement enlarged from a sheet exhibited at the Sanitary Institute. The original sheet is prepared by the Worcestershire County Council for the assistance of those persons in that county who wish to make trial of such method of sewage treatment. The only difficulty is the great fall required from the inlet to the outlet, the total being 6 ft. 6 in.; various arrangements are illustrated on the original sheet, but I have only enlarged one, showing a liquefying tank and aerobic filters, suitable for a house of fifteen persons at twenty gallons per head, equal to 300 gallons per twenty-four hours. It has always seemed that some precautions should be taken against freezing in an installation of this nature. I have heard of one "Automatic Scavenger" (Mouras' name for the liquefying tank) being frozen up; it would be very inconvenient indeed if such should be the fate of some erected by our members; this is one of the points to be thought out.

I do not suppose any paper on the sanitation of a country house would be complete without some remarks on the dry system. A properly situated and arranged earth-closet is a most sanitary adjunct to a country house, no matter what class it may be intended for. Everything good in this world requires attention, and because the earth-closet requires, perhaps, a little more attention than people care to bestow upon it, it has got into bad repute. I speak now of outdoor—and shall we say isolated—earth-closets. If each country house was provided with an earth-closet constructed on the lines advocated by Dr. Poore, in his books, "Rural Hygiene" and "The Dwelling-House," I imagine some of the difficulties of sanitation would be got over, and some of the dangers from the want of it would never arise. I refer, of course, to the "dry catch" system, the principle of which is that the floor on which the excreta falls slopes towards the outside, allowing the urine to run into a receptacle filled with mould, and so the excreta is left dry, in which state objectionable gases are not generated. The usefulness of this arrangement depends, of course, upon regular attention—I do not say daily attention, as I intended to do at first, but regular. The difficulty is in getting people who will go just a little out of their usual course to obtain what will, no doubt, have beneficial results, the latter being to the people concerned not quite apparent. I can only commend to your attention the books of Dr. Poore, as you ought to know something of this method even if your clients cannot be brought to adopt the system advocated. I also suggest for your perusal an article in *Country Life* in the number July 6, 1901, called "An Experiment in Sanitation," written by Dr. Poore, which deals in a most admirable manner with the storage of rainwater, and the disposal of slop-water and excreta, suitable for cottages.

Now, gentlemen, I have concluded, not because I have exhausted the subject, but because I was particularly asked not to make the paper too long, and also for the very good reason that I wish to leave time for a discussion, during which I hope that I amongst others may obtain some valuable information. I have tried to bring before you some points which are usually admitted as essential to the sanitation of a country or indeed, any house, but which I find require a great amount of supervision to ensure their being done properly, and as the very essence of sanitation is thoroughness in every small detail, I commend it to your most careful consideration, with the final remark that one of our objects should be to try and obtain "The most perfect action of body and mind during as long a period as is consistent with the laws of life; in other words, to render growth more perfect, decay less rapid, life more vigorous, death more remote."

The Chairman, in inviting discussion, said that Mr. Max Clarke might set his mind at rest; they had not wasted their time that evening.

Mr. Thomas Blashill said he desired to propose a very hearty vote of thanks to Mr. Max Clarke for a very valuable paper, which dealt very fully with many important matters. As to the difficulty of getting drains put in properly, he thought that workmen were getting more reliable than they used to be; perhaps because architects and builders were getting to know better what they wanted. He had felt disheartened at times to find that it was not sufficient to stand on the brink of a trench to see whether the workmen were carrying on the work properly. Once a very good builder said he would set some bricklayers to do the drains, as they would take more care. He with the builder watched the men lay a certain length of the drain, and while doing so he noticed that the "cement" being used was nothing but earth, for although the men had a bag of cement, they were using earth in order to economise their master's material. The testing of drains by the sanitary authority or by the architect would make such an attempt impossible. Mr. Clarke had mentioned certain difficulties in regard to basement-floors, or the lower floors of houses. He (the speaker) had not in the last twenty years put a wooden floor down as the lowest floor of a house with a space underneath; it was a great mistake to do anything of the kind. What should be done was to put coke breeze on ordinary concrete down and to nail the boards to that, and if this were done, ground air, rats, or things of that kind would be prevented from getting through. The boards should be treated with some of the three or four solutions which were on the market—Burnett's, for instance—but if that could not be done they could still nail the boards down without treatment. The boards should not be too thick, and if, or when, they wore out they could be replaced. As to dry-rot, he had seen it in the upper floors of houses, which floors had been pugged in the ordinary way, and where the boards had been nailed down too soon. Dry-rot was likely to attack in such circumstances, and if the rot could be discovered in time, it was a good and successful treatment to scrape the whole of the fungus off, and, with some Burnettising solution, thickened with whiting, cover the whole of the affected parts thick with it. In his experience that treatment, if adopted in time, was a cure. As to air-bricks, if they were relied on to ventilate a space under a floor, they were useless, for they always got stopped up; besides, they were useless if they were not stopped up. As to iron ventilating pipes for closet pipes, the usual result of using those pipes was that so much rust fell from them that the bottom was blocked up. He was strongly in favour of overhanging eaves. He had not done much in the way of hollow walls, but he had seen a great deal of such work where the damp came in under the flashings of the roof, against the outer wall, and he thought it was better to have solid walls. Overhanging eaves entirely stopped anything of the kind he had referred to happening. As to Mr. Clarke's remarks about the sewage disposal of a country house, he did not think the lecturer had

gone into the matter exhaustively. To put sewage into a pipe was not disposing of it; the difficulty began when they commenced to dispose of it. The Local Authorities would not allow it to be put into ditches which ran into cow ponds, and if it were put on grass where cows grazed, and the soil was not perfectly porous, the effect on the cows was disastrous after a time, as abortion was brought on. That might happen to two or three of the cows, but sometimes half or two-thirds of a herd were so affected. He was perfectly satisfied that in country cottages there should not be drains or sinks or anything of the sort. He was satisfied that every kind of slop produced in an ordinary country cottage with a garden could and should be disposed of in the old-fashioned way of putting it on the garden or giving it to the plants. Directly it was put into a tank or sink there was more or less trouble, but if they threw it on to the cultivated land it was done with. We ought to have more confidence in the purifying power of earth, and slops and excrement, if disposed of in this way, were never seen again. They should not put the stuff in pits, for the microbes which dealt with it were on the surface, and they would keep there if food was put there for them. The same with earth-closets; he had had great difficulty in getting them managed in a sensible way. The machinery of the closets did not work well sometimes when the closets were put down; people wanted to use ashes, instead of earth, and they might just as well use marbles. Ashes blotted up the moisture, but they did not deodorise. Dry earth was not suitable for earth closets, for it did not absorb the liquid as did a slightly damp earth taken in its natural state. The soil should not be buried deeply; all that should be done was just to cover the soil. As to the "automatic scavenger," a client, who had a large house very fully inhabited, told him that it acted splendidly, and he (the speaker) thought they would do well to give attention to it.

Mr. P. Gordon Smith, in seconding the vote of thanks, said a good deal had been said about Portland cement. They all knew the eccentricities of that material, and he had come to the conclusion that stoneware drains were not to be relied on, because the cement at the joints often split the joints of the pipes, and he had made up his mind to have nothing to do with stoneware pipes, but to substitute heavy cast-iron pipes with Angus Smith's solution on the inside. Such a pipe had many advantages over the stoneware, particularly in the fact of having one joint to three or four in the stoneware pipes. He was once concerned in the laying of some stoneware pipes; he saw the work being done and he knew it was performed in the best manner possible, and yet eight years after it had been completed nearly all the pipes leaked and had to be taken out and iron ones substituted. He had come to the conclusion that the iron pipe was the pipe of the future for all drain purposes. As to covering the area of the site of a building with concrete, that was an excellent plan if properly done. He knew the need of it, for he had seen a house in a Staffordshire village which was built above some disused coal mines. Some coal got ignited, and products of combustion arose from the earth and got into the house in cold weather when the ground outside was frozen and hard, and nearly killed all the family. Catching rain water was an important matter in villages where there was no water supply, but the collection was apt to be very objectionable if not properly done. It was a common practice to put gullies under rain-water pipes, whether they were wanted or not, and these gullies received all sorts of things besides rain water. Servants cleaning the house-step put slop-water into the nearest gully, and gullies were often used as urinals, and he had known of a case where serious results had followed from drinking water from a rain-water tank which had been receiving slop-water without anyone noticing it. Gullies ought not to be put where rain-water drains were connected with a tank; the down spouts should be connected directly with the rain-water drains. Copper baths were excellent things in their way, but he had had his notice directed to some copper baths in a hospital where the labour of keeping them clean was very great—almost prohibitive. If the baths were enamelled it was all right, provided the enamel did not come off in a few years. He had rather peculiar views about baths, for he thought they were more or less luxuries. One did not require a bath necessarily to keep clean; that could be done with a tub and a couple of gallons of water; but it was nice, it was a luxury, to recline in a bath at full length; but where there were a number of people taking baths, it meant an enormous consumption of water and appeared to be an extravagance. Spray baths, which were made in considerable numbers, were excellent things; comparatively little water was used, and the time occupied in using them was also an advantage. The hot-water supply to baths was another trouble, especially in private houses where two or three successive baths were wanted in the morning; there was great difficulty in getting hot water. As to cisterns, he thought it would be wise to bear in mind that they were more useful if they were in duplicate. If there were two cisterns, one could be cleaned out or repaired without interfering with the supply of water, and that was a great advantage. As to cesspools, he did not think they should be allowed anywhere, not even in the country. Sewage ought to be disposed of on the land or by sewers; cesspools were an absolute nuisance and ought to be prohibited.

Mr. E. O. Sachs said he would like to say a word or two arising out of Mr. Max Clarke's remarks as to the seriousness of the fact of the rising generation of architects growing up without a proper feeling of responsibility in these matters of sanitation. He (the speaker) was afraid that younger members of the profession were too liable to make use of those wonderful institutions called sanitary associations which, for two guineas, looked after these sanitary matters. Some architects of the rising generation shirked their responsibilities in these matters, and did not enjoy the sanitary side of architecture. It was most necessary that the young architect should take up the sanitary side of his work in a far more serious manner than he often did. It was also a matter of regret that it was so difficult to obtain from the ordinary country builder a sense of responsibility. The country builder performed his work in a most dilatory manner, and only recently he (the speaker) had had experience in Kent and Surrey where the builders had done their work in a most slovenly way. The architect, especially the London architect, could not watch everything that was being done, and many jobs did not justify the expense of a clerk of works, or of an assistant being constantly sent to supervise; and in such cases the builder was left to a great extent to his own devices, and it was unfortunate that, quite irrespective of any question of deductions for faulty workmanship, or any question of reconstruction, there was no legal punishment for bad work.

Mr. W. E. Hewitt, in supporting the vote of thanks, asked if the lecturer knew of a satisfactory method of turning bath and sink waste into the gully, giving 18 in. of open channel such as the local by-laws required? The most successful he knew of was the Albion clay slipper, which discharged underneath the grid and had 12 in. or so of open channel. He quite agreed with what had been said as to earth closets. Ladies as a rule objected to them because there was so much dust, but that was when ashes were used. There was a difficulty as to upstair arrangements when earth closets were used, but that could be overcome by the use of commodes.

Mr. F. G. H. Hooper said that the rather obvious remedy for Mr. Sachs' difficulty as to scamped drainage work was to see the work before it was covered up.

Mr. E. Greenop said that in choosing a water-closet pan one had to be very careful that the arm provided for anti-siphonage was in such a position that the soil would not be washed up, and the more up-to-date sanitary authorities were condemning closets of good makers on this ground. He thought that labels should be put on all cocks, especially in a large house. One difficulty as to stoneware drain-pipes was the frequency of the joints; he had tried to get 3-ft. pipes instead of 2-ft. ones, but he found it was difficult to do so. Diameters of drain-pipes for ordinary houses were, in his opinion, always too large. He could confirm Mr. Clarke's views as to the inadequacy of the size of gully grids tested by observation in heavy storms. He had also put a filled gully in his house in London and in ordinary weather and without a fire the water had dried up in a fortnight.

The Chairman, in putting the vote of thanks to the meeting, said that Mr. Clarke might have said a little more about septic tanks. Clients still seemed to regard the septic tank as if it were in its preliminary trial stage, and in one case he knew of ordinary cesspools had to be provided simply in order to get over a client's misgivings. He thought the suggestion as to duplicate cisterns was a very good one, and by having two flat cisterns they could be arranged quite close to the eaves, and did not take up so much space. With regard to sinks in housemaids' closets, it was always a difficult matter to know what to do to provide a sink such as housemaids required, and he asked Mr. Clarke if he could give the members any further advice in this direction. The whole paper, in his opinion, went to show that an architect should not be dependent upon others in these matters, but should become more or less a sanitary expert. It was no good designing the house beautiful, or to devote time to fumigating the oak to perfection, if an error was made in the sanitation, and if the drains were to be badly arranged, it would be better had the house not been built.

The vote of thanks having been heartily agreed to,

Mr. Max Clarke, in the course of his reply, said he quite agreed with Mr. Blashill's remarks as to overhanging eaves. As to sewage, he put it into a pipe and then on to the land, and he found that the cows were not affected in the way Mr. Blashill had described. As to the automatic scavenger, he had put one in for the Church Body of Ireland when building a rectory for them. They were sceptical as to its utility, and he asked them to allow him to put it in at his own cost, as he had such faith in it. They agreed to that, and five years afterwards, the automatic scavenger having answered so well, he received a cheque for the work. If any one went to the septic tank manufacturers and asked for a sample of the effluent, the gentleman who had the matter in hand would pour out a portion of the effluent and drink it, and surely the Local Authorities would not object to such an effluent as that going into the ditches.

Mr. Blashill, interrupting, said his objection was as to the raw sewage being put upon the land. The septic tank or the scavenger was a cure.

Mr. Clarke, continuing, said Dr. Poore's book and paper were emphatic as to the disposal of excreta in the earth, but it was no use whatever to bury it 3 ft. deep; they might as well make a lot of little cesspits with it. The nearer the surface the excreta was put, the more effectual was the action of bacteria, which required air, and unless they got it the excreta would merely get into a state of sliminess. They might discuss drains, and the importance of making them good, until Doomsday. There was no building in the world that could not be made absolutely drain-tight if people would only start in the proper way. There was a notion that the only way to put down drains was to put in stoneware pipes or pipes which were correct when laid. The Science Committee of the Institute of Architects were, to some extent, instrumental in getting the County Council to adopt pipes with flange joints, and if iron pipes, coated with Angus Smith's solution, were used, there need be no difficulty about the drains. When people wish for an installation of hydraulic power or a steam engine the engineers never suggest that there may be a difficulty as to the supply on account of leaky joints, although one main may be under a pressure of 700 lbs. and the other 500 lbs. to the square inch; why then should there be any difficulty about drains which would last ninety or 100 years, and which it would be impossible to get any air through, even if the pipe were put under a pressure of 100 lbs. to the square inch. As to sinks, it was not an uncommon thing in better class houses for sinks to be used as urinals by the footmen and butlers; consequently, the fewer sinks there were the less would there be any of that sort of thing. As to bad workmanship, that could be dealt with by keeping back some of the money, and, if the work were not carried out satisfactorily, not to pay that money. As to making soil-pipes too large, he had a piece of lead pipe the bore of which was nearly stopped up by deposits. The by-laws of the L.C.C. gave a definite method for the anti-siphon pipe to be turned into the arm of the closet, *i.e.*, that it should be turned into the arm in the direction of the flow. A teaspoonful of salt would prevent the evaporation of water from gullies, but people could not be got to attend to that detail.

If more care and cleanliness could be instilled into the ordinary housemaid, any sink would do, but as that could not be done, the only sink that was possible was one so arranged that it did not matter what was put down; it must be sufficiently large to take all sorts of things. In New York, when any sanitary work was contemplated, careful drawings had to be submitted to the authorities, and that was what would be required in this country before long. Every pipe and trap had to be shown, and the sooner that was required here the better.

The Chairman announced that the next meeting would be held on the 29th inst., when Mr. Arnold Mitchell would deliver an address on "Capitals," illustrated by lantern views. Mr. Mitchell had consented, at short notice, to take Mr. Bond's place that evening, as Mr. Bond, who was to have read a paper on the same subject, was unwell.

The meeting then terminated.

BUILDERS' BENEVOLENT INSTITUTION:

ANNUAL DINNER.

THE fifty-fourth annual dinner of the Builders' Benevolent Institution took place at the Hall of the Worshipful Company of Carpenters, Throgmorton-avenue, E.C., on Thursday, the 14th inst. Mr. J. Carmichael (President of the Institution) occupied the chair, and amongst those present were Mr. G. H. Fellowes Prynne, F.R.I.B.A.; Mr. J. Howard Colls, Mr. D. Duff, Dr. R. R. Oram, Mr. W. B. Brown, Mr. K. D. Young, Mr. T. H. Brooke Hitching, C.C.; Mr. A. Ritchie, C.C.; Mr. W. Gillbee Scott, F.R.I.B.A.; Mr. E. I'Anson, F.R.I.B.A.; Mr. H. N. Lancaster, A.R.I.B.A.; Mr. J. Gibson, A.R.I.B.A.; Mr. H. T. Hare, A.R.I.B.A.; Mr. J. Wigley, Mr. A. Masson, Mr. F. Farquharson, Mr. B. P. Ellis, Mr. A. E. Parker, Mr. B. Woodward, Mr. J. Scott Balfour, Mr. H. Holloway, Mr. R. J. Greenwood, Mr. H. H. Bartlett, Mr. J. Randall, and Mr. T. Rider. The company numbered altogether about 200.

After the usual loyal and patriotic toasts,

The Chairman proposed the toast of the evening, "Success to the Builders' Benevolent Institution." He pointed out that the object of the charity was to relieve men who had been builders and in business for at least ten years, whose age must not be less than fifty-five, whose character would bear the strictest scrutiny, and who were now in poverty and want. He had often thought, had he been a Carnegie nothing would have given him greater pleasure than to search for and find out the thousands of poor but honest tradesmen scattered throughout the length and breadth of our land, so that he might help and assist them. He believed there was no more deserving class of men, and none who would more highly appreciate a little financial aid. The cause was a good one, and, whilst they were exceedingly grateful for all donations received, he wished to make a special appeal to all London builders to help this deserving charity by becoming regular annual subscribers. This was essentially a builders' charity, and ought to be supported by builders. Our merchants did nobly, but he regretted he could not say the same of some of our builders. The annual subscriptions had fallen off considerably this year, but he hoped they would make up the deficiency that night. The funds were administered with the greatest possible care, and at a minimum of cost. It might well be written over the doorway of the committee-room "No impostors need apply!" In conclusion he asked the company to remember the words of his fellow countryman, Thomas Carlyle, "I pass through this world but once; therefore any good thing that I may do, or any kindness that I may show, let me do it now; let me not neglect it, as I shall not pass this way again."

The other toasts were, "The Worshipful Company of Carpenters," proposed by Mr. B. J. Greenwood, and responded to by Mr. John Wilson, J.P., the Worshipful Master of the Carpenters' Company; "The President," proposed by Mr. A. Ritchie, J.P., C.C., and responded to by the chairman; "The Architects and Surveyors," proposed by Mr. J. Howard Colls, and responded to by Mr. G. H. Fellowes Prynne, F.R.I.B.A., and Mr. W. Blumfield Brown; and "The Vice-Presidents, Committee, and Stewards," proposed by Mr. Henry Holloway, and responded to by Mr. E. J. Lough.

During the evening the secretary, Major R. A. Brutton, read the list of subscriptions and donations, which amounted to 1,010*l.* 3s. The President's list showed a total of 948*l.* 17s. 6d., towards which the President himself contributed 105*l.*

COMPETITIONS.

MUNICIPAL BUILDINGS, WALTON-UPON-THAMES.—The first premiated design in the Competition for Municipal Buildings, &c., Walton-upon-Thames, is by Messrs. Mackintosh & Newman, Birkbeck Bank Buildings, Holborn. The second premiated design is by Mr. Geo Sedger, Great James-street, Bedford-row, and the third by Mr. Sidney Tatchell, Chevening-road, North Kensington, W.

POOR LAW HOSPITAL FOR EXETER.—At the weekly meeting of Exeter Board of Guardians on the 12th inst. the question of a new hospital was considered. Canon Hobson moved "That architects be invited to provide plans for a new hospital for 150 beds at a cost not exceeding 80*l.* per bed. That the hospital be built in sections as circumstances may require or permit, and that the first section, comprising administrative block, labour wards, isolation wards, and children's wards, be taken in hand as soon as arrangements can be made." Mr. Letheren seconded the resolution, which was carried. Mr. Munro gave notice that at the next meeting he should move to rescind the resolution.

ARCHITECTURAL SOCIETIES.

THE MANCHESTER SOCIETY OF ARCHITECTS.—At the monthly sessional papers meeting on the 14th inst. (Mr. Darbyshire presiding) there was an exhibition of students' drawings, and the following prizewinners were announced:—Design for a small plunge bath, Mr. Gerald Salamons. For the sketches in connexion with the summer visits—1st prize, Mr. Frank Osler; 2nd prize, Mr. Gerald Salamons. For measured drawings—1st prize, Mr. Claude Paterson; 2nd prize, Mr. Gerald Salamons. Afterwards Mr. Paul Waterhouse read a paper entitled "Architecture Among the Modern Arts." Mr. Waterhouse said he took it to be an axiom that the greatest periods of historic art had been those in which there was no consciousness of art; that, in fact, consciousness in art was a danger to its existence. He would during his paper inquire whether we were to look upon the modern practice of analysing the very nature of art as a necessary menace to our powers of art production. Our age was above all, he said, an age of expression, and in architecture especially the powers which made the critic were, he thought, allied to those which made the producer. In fact, the very mental exercises that enabled us in these days to define and detect that essence of art which was unnameable to our forefathers were not necessarily destructive of creative skill, but might be turned, at least so far as architecture was concerned, into the instrument of a riper, fuller, and more intellectual creation. After speaking of the simplicity which underlay Greek art, the beauty of some of the best specimens of Roman architecture, and the buildings of the Italian Renaissance, which last, he said, breathed the very essence of art, the speaker emphasised the fact that art as we understood the word was never talked about by their builders. In the great Gothic days the mason was a skilled craftsman, who was imbued with a simple pride in his work, which was to him an expression of pious faith and Christian belief; but the mason would have been quite unable to talk about his work. Until the present age art was cherished and beloved, but never talked of. We had, however, to-day the wish, and sometimes the ability, to express things which a former age would never have attempted to handle. Each preceding age had a style of architecture of its own. To-day an unconscious selection was exercised, but all noble work had its traditions in recognised styles, and was more or less the result of an academic choice. No architect to-day could consider himself equipped for his work without a sound knowledge of the elements in which he worked. So far from being choked, as some argued, by deeper insight, the architect must necessarily be a student. He attained the highest possible to him only when he could criticise his own work in the light of knowledge. Architecture was, so to speak, the application of taste to construction, therefore only the man of wide knowledge could be trusted to vary or modify the old rules, since his power to judge depended upon his knowledge of the work of his predecessors. Architecture was creative and arose from the divine in a man. As its name implied, it was the queen of crafts; the architect was not an imitator, but a creator.

NORTHERN ARCHITECTURAL ASSOCIATION.—The opening meeting of the winter session of the Northern Architectural Association was held at 36, Northumberland-street, Newcastle, on the 13th inst., Mr. Frank Caws, F.R.I.B.A., presiding. Mr. Wm. Glover wrote resigning his position as a member of the Council of the Association, stating that the health of himself and wife was far from satisfactory, and that, therefore, he had decided to leave this district and to reside in the south. The President and Hon. Secretary (Mr. A. B. Plummer) expressed their regret at the severance. The President then delivered his inaugural address, in the course of which he said:—The nineteenth century will be distinguished by the future architectural historian as the most fickle century of all, in regard to the number, variety, and incompatibility of the styles and fashions of buildings which it has so restlessly and inconstantly first embraced and then spurned. During this fickle century the Battle of Styles has been fought to a finish, not of the "final issue," which never can be finished, but to a finish of the two contestants, the old Classic and the resurrected Gothic, which entered both on the fray, and neither of which has survived. "As dead as Queen Anne" is an expression which has passed into a common by-word; yet it is remarkable that if there is any distinguishable survivor of the architectural fights of the great Victorian age it is the Queen Anne type, which still possesses much vitality, and seems to enjoy a fair prospect of extending its influence far into the twentieth century. Regarding the future of British architecture, we need not ask, "What will the end be?" For there will be and can be no end to the mutable fashions affected by restless humanity. Signs are not wanting that the rising generation of architects, to whom the twentieth century belongs, are coming to regard an intimate acquaintance with structural principles as a *sine quâ non* of professional proficiency; for not merely statics, but also dynamics, are now included in the curriculum of the preliminary examinations which even novitiates must pass ere they can take rank merely as students of the Royal Institute of British Architects. The truly successful modern architect must of necessity be an artist, scientist, and commercialist, and withal an excellent society man, all rolled into one. The popular measure of success is not supreme technical skill, is not even genius itself—that gift from the Highest to the highest—but is gold. This debasing influence reveals its presence amongst us by an increasing disposition to bribe clients to employ us, by offering our services at rates of remuneration below the rates fixed by usage, and by which every member of the Northern Architectural Association and of the Royal Institute of British Architects, to which it is affiliated, is bound, in honour and fairness to his professional brethren, to firmly adhere. To what extent these nefarious practices obtain amongst architects it is not easy for the clean-handed to discover, even if wishful to probe foul waters. Too many modern attempts at originality in architecture issue in mere oddities and vulgar sensationalism. Cruel contortions of gable copings and pediments, coupled with rustication carried to absurd excesses, are having a run just now. But the public taste, though strong enough to enjoy almost any architectural novelty, however vulgar, will become soon nauseated with such wretched fare. Nature's method of originality is worthy of our highest emulation. She knows how to be unfailingly interesting, and perpetually original, within the limitations of type. For example, in her reproductions of the human face divine she never makes two alike. Every human face possesses individuality, *i.e.*, originality. Yet the number and arrangement of the features are the same in all cases, the greatest differences of individuality being due to the smallest and most subtle variations. Nature's originalities are produced not by such horrible expedients as putting eyes in foreheads or by other monstrous transpositions of features, but by the most exquisite touches of ineffable art.

Illustrations.

VICTORIA MEMORIAL DESIGN.

WE give this week the plan of Mr. Ernest George's design for the Victoria Memorial, with the view of the ornamental *place* near the palace, and a view of the triumphal arch at the east end of the processional road.

We have already commented fully on the design in our article of the 2nd inst., and the architect has no special remarks to offer.

In regard to the arch, or rather gateway screen, while we think it a very charming composition, we may observe that it conveys more the idea of being an entrance to a park than a royal or national triumphal arch.

HOUSE, BARNT GREEN, WORCESTERSHIRE.

THIS house was designed to command the extensive views of the Avon and Severn valley from the Lickey Hills, the site falling rapidly towards the south. The materials proposed were Bromsgrove stone, rough-cast, old brick chimney shafts, and Colley Weston stone slates for the roofs, with oak finishings inside. Execution has been deferred for the time being.

The coloured drawing from which the illustration is reproduced was hung in the last Royal Academy Exhibition, and was prepared by Mr. C. E. Bateman, of the firm of Messrs. Bateman & Bateman, of Birmingham, the authors of the design.

SOME EIGHTEENTH-CENTURY IRONWORK.

THIS sheet of drawings, by Mr. G. G. Poston, represents some typical examples of eighteenth century ironwork. Two of them are from St. Paul's Cathedral, but most of the others, as will be seen, are from less known and less central situations.

DISTRICT SURVEYOR'S DISTRICTS.

AT Tuesday's meeting of the London County Council the Building Act Committee brought up the following Report, the recommendations being agreed to :—

"We have had under consideration the question of adjusting the limits of the various district surveyors' districts under the London Building Act, 1894, in order to make those limits, as far as conveniently may be, coterminous with the boundaries of the metropolitan boroughs constituted under or in pursuance of the London Government Act, 1899. Section 139 (1) (*a*) of the London Building Act, 1894, provides that the Council 'may alter the limits of the district of any district surveyor, or unite any two or more such districts, and place any such altered district under the supervision of any district surveyor, and do all such matters and things as are necessary for carrying into effect the power hereby given.' The various district surveyors interested have been consulted, and with the exceptions and reservations, and subject to the conditions hereinafter in the several recommendations contained, no objection is raised by those district surveyors to the adjustments of limits recommended. With a view to filling the existing vacancies caused by deaths and resignations, we propose to invite applications by advertisement. We recommend :—

'(*a*) That the eastern limit of the district of Battersea, Central, be adjusted from Wix's-lane to Nine Elms so as to coincide with the boundary of the Borough of Battersea at that part.

(*b*) That the Western limit of the district of Battersea, North, be adjusted so as to coincide with the boundary of the Borough of Battersea at that part.

(*c*) That the western limit of the district of the southern division of Battersea and the detached portion of Clapham be adjusted so as to coincide with the boundary of the borough of Battersea at that part; that the southern and eastern limits between Trinity-road, Tooting, and the western end of Nightingale-lane be adjusted so as to coincide with the boundary of the Borough of Battersea at that part; and that the district be designated Battersea, South, and part of Wandsworth.

(*d*) That the western limit of the district of St. Mary Magdalen, Bermondsey, St. John, St. Olave, and St, Thomas, Southwark, be adjusted so as to coincide with the boundary of the Borough of Bermondsey, so far as such limit adjoins the district of St. Saviour, St. George-the-Martyr (part), Christchurch, Southwark, and the Northern Division of Lambeth; that Mr. V. J. Grose, who is at present District Surveyor for St. Pancras (East), be transferred and appointed to the said district of Bermondsey, &c., upon condition that he shall not accept private practice within that district, but otherwise upon the terms of his present appointment, and that such transfer and appointment shall date from January 1, 1902.

(*e*) That the northern limit of the district of Bethnal Green East and South Bow be adjusted from Cambridge-road to Skew Bridge, Old Ford-road; that the district limit from Skew Bridge eastward be altered so as to coincide with the centre line of Old Ford-road to the existing limit of the district; and that the southern limit be adjusted from Cambridge-road to Bow-road so as to coincide with the boundary of the Borough of Stepney at that part.

(*f*) That the limits of the district of Bethnal Green West, westward of Cambridge-road, be adjusted so as to coincide with the boundary of the Borough of Bethnal Green, westward of such road, subject to the supervision by Mr. H. Lovegrove, district surveyor for Islington, South, Shoreditch, &c., of the erection of new buildings upon a site on the east side of Goldsmith's-row, bounded by Kay-street and Hackney-road.

(*g*) That the parish of St. Paul, Covent Garden, be transferred from the district of Holborn and East Strand to the district of Bloomsbury, St. Martin-in-the-Fields and Soho; that the northern limit of the said district of Bloomsbury, &c., be adjusted so as to coincide with the boundary of the Borough of Holborn at that part; that at the expiration of five years from January 1, 1902, that portion of the district in the Borough of St. Pancras be surrendered by the present district surveyor and added to the district of Holborn, &c., as proposed to be adjusted; that the limit from the south-eastern corner of Lincoln's-inn-fields to Kemble-street be adjusted so as to coincide with the boundary of the Borough of Holborn at that part, and that at the expiration of five years from January 1, 1902, the area on the south-east side of Kemble-street be surrendered by the present District Surveyor and be added to the district of Holborn and East Strand; and that the limit of the district from Kemble-street be defined by the centres of Drury-lane, part of the proposed new street to be formed by the Council, and the Strand to the existing limit of the district.

(*h*) That the western limit of the district of St. Leonard, Bromley, be adjusted so as to coincide with the boundary of the Borough of Poplar at that part.

(*i*) That the detached angular portion of the district of Newington, West, and part of Lambeth, situated on the north-east side of Camberwell New-road, westward of Camberwell Green, be transferred to the district of St. Giles, Camberwell; that the eastern limit of the district of St. Giles, Camberwell, from New Cross-road to the county boundary, be adjusted so as to coincide with the boundary of the Borough of Camberwell with the exception of an area eastward of Ivydale-road, forming part of the Haberdashers' Company's estate; that the north-western limit from Camberwell-road to Camberwell New-road be adjusted, so as to coincide with the boundary of the Borough of Camberwell at that part; and that the limit from that point be defined by the centre of Camberwell New-road to Camberwell Green, and thence by the old boundary of the parish of Camberwell to Dulwich-road, and thence by the centres of Norwood-road, Croxted-road, and Thurlow Park-road and the old boundary of the parish to the county boundary.

(*j*) That the limits of the district of Charlton, Lee, and Kidbrooke, be adjusted so as to coincide with the boundaries of those parishes as amended under the provisions of the London Government Act, 1899.

(*k*) That the western, northern, and eastern limits of the district of Chelsea, North, be adjusted so as to coincide with the boundary of the Borough of Chelsea at those parts.

(*l*) That the western and eastern limits of the districts of Chelsea, South, be adjusted so as to coincide with the boundary of the Borough of Chelsea at those parts.

(*m*) That the northern limit of the district of Clapham be adjusted so as to coincide with the boundary of the Borough of Wandsworth at that part.

(*n*) That the western limit of the district of St. James and St. John, Clerkenwell, and part of Islington, northward of St. Sepulchre Without, be adjusted so as to coincide with the boundary of the Borough of Finsbury at that part, and that the eastern limit of the said district be defined by the centre line of Goswell-road.

(*o*) That the vacant district of north-east Deptford be united with the district of south-east Deptford; that the district thus constituted be designated Deptford, East; that the northern and southern limits, and also the eastern limit southward of the parish yard at Deptford-creek, be adjusted so as to coincide with the boundary of the Borough of Deptford at such parts; that Mr. W. H. Lees, district surveyor for south-east Deptford, be appointed district surveyor for the district of Holborn and East Strand, upon condition that Mr. Lees do resign his present appointment as District Surveyor for South-East Deptford; that he do devote the whole of his time to the duties of his office, and do not during his continuance in office (except in the discharge of the duties thereof) carry on business as an architect, surveyor, or builder, or directly or indirectly as partner or otherwise, be interested in such business, and also upon the other conditions attaching to the appointment of District Surveyors; and that Mr. Lees' resignation and appointment as District Surveyor for the district of Holborn and East Strand, &c., do take effect as from January 1, 1902, and that, in the meantime, he be appointed interim Surveyor for that district; and that advertisements be issued inviting applications for the appointment of District Surveyor for Deptford, East.

(*p*) That the northern and eastern limits of the district of Fulham, North, be adjusted so as to coincide with the boundary of the Borough of Fulham at those parts.

(*q*) That the eastern limit of the district of Fulham, South, be adjusted so as to coincide with the boundary of the Borough of Fulham at that part.

(*r*) That the western and southern limits of the district of Greenwich be adjusted from the parish yard at Deptford-creek to Pond-road, so as to coincide with the boundary of the Borough of Greenwich at that part.

(*t*) That the southern limit of the district of East Hackney, South and North Bow, be adjusted from Cambridge-road to Skew Bridge, Old Ford-road, so as to coincide with the boundary of the Borough of Bethnal Green at that part, and that the district limit from Skew Bridge eastward be altered so as to coincide with the centre line of Old Ford-road to the existing limit of the district.

(*u*) That the western and southern limits of the district of Hackney, West, be adjusted so as to coincide with the boundary of the Borough of Hackney at those parts.

(*v*) That the eastern and southern limits of the district of Hammersmith be adjusted so as to coincide with the boundary of the Borough of Hammersmith.

(*w*) That the parish of St. Paul, Covent Garden, be transferred from the district of Holborn and East Strand to the district of Bloomsbury, St. Martin-in-the-Fields, and Soho; that subject to the surrender, at the expiration of five years from January 1, 1902, by the present district surveyor 1or Bloomsbury, &c., of the area in the north-east corner of his district which is in the Borough of St. Pancras, that portion of the Borough of St. Pancras southward of Euston-road, and eastward of Upper Woburn-place and Tavistock-square, be added to the district of Holborn and East Strand; that the limit from the south-eastern corner of Lincoln's-inn-fields to Kemble-street be adjusted so as to coincide with the boundary of the Borough of Holborn at that part, and that at the expiration of five years from January 1, 1902, the area on the south-east side of Kemble-street be surrendered by the present district surveyor and be added to the district of Holborn and East Strand; that the limit from Kemble-street be defined by the centres of Drury-lane, part of the proposed new street to be formed by the Council, and the Strand to the existing limit of the district; that St. Sepulchre Without and the Charterhouse do remain part of the district of Holborn, &c., and that the eastern limit, northward of St. Sepulchre Without and the Charterhouse be adjusted so as to coincide with the boundary of the Borough of Holborn at that part; and that the district thus constituted be designated Holborn, East Strand, and part of St. Pancras.

(*x*) That the vacant district of Hampstead, West, be united with the district of East Hampstead, &c., that those portions of the latter district known as North St. Pancras and North-west Islington be surrendered by Mr. F. Hammond (the present district surveyor) and added to the district of East Islington; that the southern and eastern limits of Mr. Hammond's district thus constituted the adjusted so as to coincide with the boundary of the Borough of Hampstead, and be designated by the name of that borough; and that such alterations do take effect from January 1, 1902.

(*y*) That the district of Islington, East, be enlarged by the addition thereto of North-west Islington and North St. Pancras, and also by the addition of so much of the district of St. Pancras, East, as is situated eastward of Camden-street and Oakley-square (north side) and northward of Euston-road; that the district thus constituted be designated Islington, North, and St. Pancras, East, and that such enlargement do take effect from January 1, 1902.

(*z*) That the limits of the district of Islington, South, Shoreditch, and Norton Folgate be adjusted so as to coincide with the boundaries of the Boroughs of Islington and Shoreditch, subject to the retention of Norton Folgate by the present District Surveyor, Mr. H. Lovegrove, and to the supervision by him of the erection of buildings on a site on the east side of Goldsmith's-row, bounded by Kay-street and Hackney-road, and also on a site on the west side of City-road, southward of Baldwin-street.

(*aa*) That the limits of the district of South-west Islington, St. Luke, Old-street, and the Liberty of Glasshouse Yard, be adjusted so far as they relate to the latter portion of the district, to coincide with

the boundary of the Borough of Finsbury eastward of the centre line of Goswell-road and St. Sepulchre Without and the Charterhouse, subject to the supervision by Mr. H. Lovegrove, District Surveyor for Islington, South, &c, of the erection of buildings on a site on the west side of City-road, southward of Baldwin-street.

(*bb*) That the limits of the district of Kensington, North-west, be adjusted so as to coincide on the west with the boundary of the Borough of Kensington, and on the east, from Kensal-road to Kensington Gardens, with the boundary of the borough at that part.

(*cc*) That the south-eastern limit of the district of Kensington, South, be adjusted so as to coincide with the boundary of the Borough of Chelsea at that part.

(*dd*) That the districts of (1) Central Lambeth and part of Battersea; and (2) North Battersea, be united and designated "Central Lambeth and North Battersea," and that advertisements be issued inviting applications for the appointment of district surveyor for such district.

(*ee*) That no change be made at present in the limits of the district of Lambeth, South, and part of Camberwell.

(*ff*) That the western and northern limits of the district of Lewisham be adjusted so as to coincide with the boundary of the Borough of Lewisham at those parts.

(*gg*) That the eastern limit of the district of St. Anne, Limehouse, St. John, Wapping, the Precinct of St. Katharine and the Hamlet of Ratcliffe, be adjusted so as to coincide with the boundary of the Borough of Stepney at that part.

(*hh*) That no change be at present made in the limits of the district of Lower Norwood.

(*ii*) That the limit of the district of Mile End Old Town, northward of Whitechapel-road on the west, and of St. Paul's-road on the east, be adjusted so as to coincide with the boundary of the Borough of Stepney at that part.

(*jj*) That the southern limit of the district of Newington East, and part of St. George-the-Martyr, Southwark, be adjusted so as to coincide with the boundary of the Borough of Southwark at that part.

(*kk*) That the south-eastern limit of the district of Newington, West, and part of Lambeth from Camberwell-road to Camberwell New-road be adjusted so as to coincide with the boundaries of the Boroughs of Southwark and Lambeth at those parts, and that the detached angular portion of the district, situated on the north-east side of Camberwell New-road, westward of Camberwell-green, be transferred to the district of St. Giles, Camberwell.

(*ll*) That having regard to the fact that the London Building Acts, 1894 and 1898, and the by-laws, &c., made thereunder are, under the provisions of the London Government Act, 1899, and the London (Penge) Order in Council, 1900, to continue and be in force in the district of Penge until such date as the Local Government Board by order may direct, no action be taken with regard to this district.

(*mm*) That the western limit of the district of Plumstead and Eltham, southward of Shooter's Hill-road, be adjusted so as to coincide with the boundary of the Borough of Woolwich at that part.

(*nn*) That the western limit of the district of All Saints, Poplar, be adjusted so as to coincide with the boundary of the Borough of Poplar at that part.

(*oo*) That no action be taken with regard to the district of Putney and Roehampton, as beyond the severance of the area recently known as Putney, detached, this district is unaffected by the provisions of the London Government Act, 1899.

(*pp*) That the limits of the district of Rotherhithe, Hatcham, and St. George-in-the-East, be adjusted so far as relates to the portions of such limits between Deptford Reach and Trundley's-road; between Nunhead Station and New Cross-road; and between Camberwell-road and Rotherhithe New-road, so as to coincide with the boundaries of the Boroughs of Deptford and Camberwell, at those parts.

(*qq*) That no change be at present made in the limits of the district of St. George, Hanover-square, North, but that upon the completion of the rebuilding of property, on the late detached portion of St. George, Hanover-square, on the north side of Bayswater-road, which has been included in the Borough of Paddington, that area be transferred to the district of Paddington, unless circumstances should arise which may render the earlier transfer of that area desirable.

(*rr*) That the western limit of the district of St. George, Hanover-square (Belgrave and Pimlico (Division), be adjusted so as to coincide with the boundary of the City of Westminster at that part.

(*ss*) That the limits of the district of St. Marylebone be adjusted so as to coincide with the boundary of the Borough of St. Marylebone.

(*tt*) That the portion of the district of St. Pancras, East, westward of Camden-street and Oakley-square (north side), be transferred to St. Pancras, West; that the portion of the district southward of Euston-road be transferred to the district of Holborn and East Strand, subject to the adjustment of the limits adjoining the Borough of Finsbury, so as to coincide with the boundary of that borough, and also subject to the addition to the district of Bloomsbury, St. Martin-in-the-Fields, and Soho of the area southward of Tavistock-place; that the remainder of the district be united with the district of Islington, East, as proposed to be enlarged; and that the district thus constituted be designated Islington, North and St. Pancras, East.

(*uu*) That the western and southern limits of the district of St. Pancras, West, be adjusted so as to coincide with the boundary of the Borough of St. Pancras at those parts; and that the eastern limit be extended by the addition to the district of the area westward of Camden-street and Oakley-square (north side) referred to in the foregoing recommendation.

(*vv*) That the eastern limit of the district of St. Saviour, St. George-the-Martyr (part), and Christchurch, Southwark, and the northern division of Lambeth, be adjusted so as to coincide with the boundary of the Borough of Southwark at that part.

(*ww*) That the areas recently known as South Hornsey, which have been added to the County of London under the provisions of the London Government Act, 1899, be added to the district of Stoke Newington, and that the limits of such district be adjusted so as to coincide with the boundary of the Borough of Stoke Newington.

(*xx*) That the eastern limit of the district of Streatham, East, and Brixton, be adjusted so as to coincide with a line drawn along the centres of Norwood-road, Croxted-road, and Thurlow Park-road, to the existing southern limit of the district.

(*yy*) That the limit of the district of Streatham, West, be adjusted from Trinity-road, Tooting, to the western end of Nightingale-lane, so as to coincide with the boundary of the Borough of Wandsworth at that part.

(*zz*) That the western limit of the district of Sydenham be adjusted so as to coincide with the centre line of Eliot-bank, and thence southward with the boundary of the Borough of Lewisham to the county boundary.

(*aaa*) That the area recently known as Mitcham (detached), which has been included in the County of London under the provisions of the London Government Act, 1899, be added to the district of Wandsworth, East, and Tooting Graveney; that the eastern limit of Wandsworth, East, be adjusted so as to coincide with the boundary of the Borough of Wandsworth at that part.

(*bbb*) That the eastern limit of the district of Wandsworth, West, so far as it adjoins the Borough of Battersea, be adjusted so as to coincide with the boundary line between the Boroughs of Wandsworth and Battersea at that part.

(*ccc*) That the northern limit of the district of St. Mary, Whitechapel, Christchurch, Spitalfields, the Hamlet of Mile End New Town, and the Tower Liberty, be adjusted so as to coincide with the boundary of the Borough of Stepney at that part.

(*ddd*) That, where alterations in the limits of districts are approved by the Council, the solicitor be instructed to take such steps as may be necessary to secure the carrying out of such alterations, which shall be subject to the conditions that any works in progress and any proceedings in progress relating to any dangerous or neglected structure, or any other building or structure in areas surrendered by a district surveyor shall, notwithstanding the transference of those areas from his supervision, continue to be supervised by him until the completion of such works and proceedings, and that no district surveyor shall claim compensation for any diminution of income which may hereafter arise by reason of such adjustments of limits.

(*eee*) That unless otherwise specified, and subject to the exceptions, reservations, and conditions mentioned in any of the above recommendations, the transfer of district surveyors to other districts and the alterations of district limits do take effect on and after January 1, 1902, and be made in strict accordance with the conditions of the present appointments of the district surveyors concerned, and that the solicitor be instructed to take such steps as may be necessary with reference thereto.'"

COMPETITION FOR NEW MUNICIPAL BUILDINGS FOR THE URBAN DISTRICT COUNCIL OF WALTON-ON-THAMES.

THIS competition is one of those in which the winner is an easy first, with the remaining competitors far behind. Unfortunately, there is likely to be some heartburning over the result, as the authors of the first premiated design, Messrs. Macintosh & Newman, have transgressed one of the stipulations of the conditions, which enjoined that all drawings were to be executed in "black and white, or sepia and white." This injunction the successful competitors have apparently supposed to refer only to elevations, as they have coloured their plans, sections, and perspective. Although this technical breach of the conditions has occurred, the Urban District Council may be forgiven for considering that, after spending the ratepayers' money in promoting a competition in order to obtain the best available design, they would not be doing justice to their constituents by putting out of court for a trivial error a design which is far superior to any other submitted, whilst the unsuccessful competitors should accept their defeat with a good grace and the conviction that no amount of colouring in their own drawings, or the absence of it from those that have won the first premium, would bring their designs within measurable distance in point of merit of their successful rivals.

The site is at the corner of Hersham-road, to which it has a frontage of 104 ft., and Bowes-road, with a frontage of 177 ft. It is a regular trapezium, the width at the rear of Hersham-road being somewhat less than the frontage, and is amply sufficient for the buildings intended to be placed upon it. Indeed, the very amplitude of the site has led many of the competitors to ruin their chances by neglecting compactness of plan. The Hersham-road aspect of the site is a little south of west and the Bowes-road frontage a little east of south.

The buildings required on the site are municipal offices for the Clerk, Surveyor, Collector, and Inspector, council chamber and committee-room, a small fire station, a residence for the Surveyor, and apartments for a caretaker. Space had also to be left for the future erection of a police-court.

The superiority of the first premiated design is manifested both in plan and elevation. The municipal offices face the Hersham-road, from which they are entered. Left of the entrance are attendant's room, with telephone, Collector's office, and Surveyor's office, and at the rear of same, separated by a corridor 6 ft. 6 in. wide, the Surveyor's drawing office and Inspector's room. On the right of the entrance is the Town Clerk's office, fronting Hersham-road, with his clerks' office at the rear and strong-room between. On the first floor the council chamber for twenty-one members is at the north end of the building, committee-room next, and two waiting-rooms. The plan of the municipal offices is compact and convenient, but the lighting of the Surveyor's drawing office might be improved by a slight alteration in the distribution of the windows, and surely with accommodation for fifty of the public in the council chamber besides the members, officials, and Press representatives, a separate stair would be a distinct advantage.

The fire station, with accommodation for engine and hose-cart, is placed next the municipal offices facing Bowes-road, and the clubroom for fire brigade, look-out, and stair thereto, form part of the main block, and enable the authors to provide the caretaker's apartments on the first floor, whilst the look-out tower gives the opportunity for an effective feature in the composition of the exterior.

The Surveyor's residence is at the east end of the Bowes-road frontage, leaving space for the police-court between it and the fire station, and the authors have proved the sufficiency of the space provided by drawing an admirable plan for the future building.

The elevations are well designed for erection in red brick and stone in a style based upon eighteenth-century English work, but sufficiently freely treated to stamp modernity upon the grouping and detail.

Save for the one transgression to which we have already referred, the drawings are carefully prepared and fully worked out in a businesslike fashion, united with an artistic ability in design that promises well for a satisfactory execution of the work if entrusted to the authors.

The second premiated design, by Mr. George Sedger, comprises in one main block facing Hersham-road the municipal offices and the Surveyor's residence, whilst the fire station is a distinct and isolated building at the east end of the site. The planning of Mr. Sedger's municipal offices is less compact than in the first premiated plan, and, though workable, is therefore more costly for the accommodation provided than is necessary.

In the fire station the clubroom is placed over the engine house and, being approached by a narrow circular stair, would necessitate sliding poles for anything like reasonable promptness in turning out. A hose tower is provided, a good feature if funds will allow, and a site for stables is suggested. The external treatment of the design is of too domestic a character and somewhat straggling in composition.

The third premiated design, by Mr. Sidney Tatchell, like the second, fails in reaching the compactness of the first design, and has besides some further weak points; thus the

Clerk's private office is separated from his public or inquiry office by a corridor, and is placed at the rear of the building with a north-easterly aspect, whilst the waiting-room is in an inconvenient position and has its doors arranged to jam each other in opening. Like the second design, Mr. Tatchell's scheme has the Surveyor's residence at the north end of the Hersham-road frontage, thus making it part of the main block. The design is not illustrated by a perspective, and from the elevations is ultra-severe in treatment, with a probable intention of economy that would be more effectively attained by compact planning.

Some of the remaining designs have good points, but united to serious faults that justify their exclusion from the premiums, great as is the difference between the first and the two others.

"Red Circle" has an admirable plan for the municipal offices and council chamber, and a quiet, suitable, and scholarly elevation of eighteenth-century English character, but the fire station is very poorly planned and the Surveyor's residence too costly. If these adjuncts of the scheme had equalled the author's main building a higher position would certainly have been merited.

The author of "Apps Court" has made a strenuous effort to win, but is placed out of court by the rambling, extravagant nature of his plan.

"Vinces" has a suitable type of elevation and a plan better than many, but not equal to any of those premiated.

"Isis" is the motto of a painstaking author, whose misdirected energy has unfortunately resulted in a plan that is too complicated, involved, and wasteful, whilst the arrangement of the Surveyor's residence lacks a proper comprehension of domestic planning.

"Pan" sends clever elevations of *art nouveau* tendency, but the arrangement, or rather haphazard placing of plans of various floors of three different buildings on one sheet of paper, may be *chic*, but is not business, and business must be allied with art if competitions are to be won nowadays. An almost unintelligible jumble does not make for success. The plan of the municipal offices is in itself far too rambling and faulty to make a workable building.

"Lime" is another instance of a rambling plan and pretentious design that is neither suitable nor financially possible, in spite of a considerable manifestation of ability that errs on the side of over-exuberance.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday, in the County Hall, Spring-gardens, Mr. A. M. Torrance, Chairman, presiding.

Shop Blinds, Signs, &c., over Footways.—Several petitions were presented against the proposed by-laws as to the height of shop-blinds, signs, and other structures overhanging the footways. The petitions were referred to the Building Act Committee.

The Council's Bricklayers.—On the report of the Finance Committee,

Captain Swinton asked the Chairman of the Committee whether he could give the Council any information as to the credibility of a statement concerning the laying of bricks which appeared in the *Times* of Monday, and which was to the effect that the London County Council limit was 330 bricks per day, or seventy per day fewer than the present recognised number for private London contractors.

Lord Welby: Some little time ago, when there was great activity in the building trade and a difficulty in obtaining that class of labour, it was thought that our bricklayers did not lay the number of bricks per day that would be considered fair, but lately the manager reported that the number had been increased. I cannot go beyond that at present. The attention of the Works Sub-Committee has been directed to the statements in the *Times*, and we are investigating them in order to consider how far they merit confirmation. Afterwards I hope to give my hon. friend a more specific answer.

Colonel Rotton: Do I understand that because there were fewer bricklayers available, those bricklayers laid fewer bricks?

Lord Welby: I am not responsible for the gloss which Colonel Rotton put upon my answer. I pointed out that when there was great competition for their services the bricklayers whom we employed were rather slack in the way they performed their duties.

Loans.—On the recommendation of the Finance Committee, it was agreed to lend Greenwich Borough Council 3,930*l.* for paving works; Hammersmith Council 6,850*l.* for street improvements; Woolwich Borough Council 5,375*l.* for dust destructor, and 2,000*l.* for site of baths and wash-houses.

Improvements and Rehousing.—The Improvements Committee recommended the Council to approve of an arrangement for handing over to the Housing of the Working Classes Committee a rehousing site at Leroy-street, Old Kent-road, at a nominal price, in order to avoid a deficiency on the housing account. It appeared that there was a statutory obligation upon the Council to rehouse 291 persons who would be displaced by the Long-lane and Tabard-street (Southwark) improvement, and for that purpose the site in question had been acquired, and would accommodate 380 persons. The value of the land was 2,875*l.*, but the Housing Committee could only afford to allow 1,432*l.* for it, and the proposal was to make the balance of 1,443*l.* a charge upon the improvement account.

Mr. Beachcroft said this was a novel proposal, and it raised a very important question of principle. He doubted whether it was not setting aside the standing orders, and he moved to refer the report back.

Dr. Longstaff seconded the amendment.

Mr. H. Clarke observed that the trades unions had made it impossible to build houses at a profit.

Sir H. Bliss wondered by how much the cost of housing had been enhanced owing to the neglect of the British workman to give the Council a fair day's work for a fair day's wage.

After considerable debate the amendment was defeated, and the recommendation was adopted.

The Improvements Committee further recommend a similar arrangement in regard to a site at London-fields, Hackney, upon which it was proposed to rehouse 486 persons displaced by the Mare-street improvement. The value of this site was estimated at 1,250*l.*, but the Housing Committee, in complying with the requirements of the Home Office as to the buildings, were unable to allow anything for the land. It was proposed, therefore, to fix the value of the land for rehousing purposes at nil.

Some further discussion arose on this recommendation, which was then agreed to.

Vaults under Footways.—The Improvements Committee reported that, in connexion with the Holborn to the Strand improvement, they had had before them the question whether vaults should be constructed under the footway in the new street, in the Crescent-road, and on the north side of the Strand between Wellington-street and the Law Courts. The Metropolitan Board of Works constructed vaults under the footways when carrying out some street improvements, but the results were not financially satisfactory. There were, however, several reasons why vaults under the new footway on the north side of the Strand were highly desirable. They would provide a foundation upon which the footway could be laid, and the fact of having the subway for pipes close to the footway also made it more convenient to have the vaults constructed in the first instance, as the tops of the vaults could be used to support the crane, which would otherwise occupy a large portion of the carriage way of the Strand. The report added that the local authority would raise no objection to the construction of vaults projecting under the roadway to the extent of 12 ft. Excluding the frontage of certain establishments, the estimated cost was 3,500*l.*, for which the Council was recommended to pass a supplemental estimate, and the committee had reason to believe that the whole cost would be recovered from the lessees of sites on the north side of the Strand. The committee would advise in due course whether similar works should be undertaken in the new street and Crescent-road.

The report was adopted.

The New Street.—Mr. Davies, Chairman of the Improvements Committee, said that they had not yet decided what name for the new street to recommend, but the Council would have an opportunity of considering the matter.

The Widening of Piccadilly.—Mr. Davies announced that his committee had conferred with the First Commissioner of Works as to the Piccadilly widening scheme, and had come to an understanding with the right hon. gentleman. The committee would meet that day, and would bring up to the Council on Tuesday next a definite proposal, with the view of securing the authority of the Council to commence the work at once.

Erection of One-story Shops in Victoria-street, Westminster.—The Building Act Committee brought up the following paragraph:—

"The Council on October 8, 1901, for the second time referred back for further consideration our recommendation on the application of Messrs. Z. King & Son on behalf of Mrs. M. Hiscox, Mr. J. T. Hiscox, and Mr. R. T. Raikes for the erection of one-story shops and an entrance porch in front of No. 125, Victoria-street, Westminster. We have again given the matter our careful consideration, with the result that the applicants have now submitted further amended plans, which include the houses Nos. 123, 125, and 127, and also Nos. 145 to 169 (odd numbers). By this proposal the shops are intended to be erected so that no portion other than the plinths to the pilasters will project in advance of the line of the projecting bay-windows, whilst the pilasters to the porches will project 4½ in. in advance of this line. The effect will be that a strip of land 5 ft. 6 in. in width will be given up to the public way, except in front of the porches, where it will be 5 ft. 1½ in. in width, and the shops will project 3 ft. from the present line of buildings. The recommendation, which was referred back, only provided for the giving up of a strip of land 4 ft. 9 in. in width in front of the shops and 4 ft. 3 in. in front of the porch, whilst the shops were to project a distance of 3 ft. 9 in. in front of the existing buildings. It will thus be seen that the present proposal is a more advantageous one, from the Council's point of view, than the proposal previously submitted, having regard to the increased width of the land to be given up to the public; and we think that the Council should favourably consider it. We recommend—1. That the Council, in the exercise of its powers under Sections 22 and 73 of the London Building Act, 1894, but in no way otherwise than under such sections, do consent to the erection of one-story shops and entrance porches in front of Nos. 123, 125, and 127, and Nos. 143 to 169 (odd numbers only, inclusive), Victoria-street, Westminster, to the lines shown on the plan, dated November 9, 1901, submitted with the application of Messrs. Z. King & Son on behalf of Mrs. M. Hiscox, Mr. J. T. Hiscox, and Mr. R. T. Raikes."

The recommendation, after some discussion, was agreed to.

New County Hall.—Replying to a question, Colonel Rotton said a Sites Committee had been appointed, but he was afraid he could hold out no hope of there being a settlement of the matter of a proper home for the Council for a long time.

The Rev. F. Williams asked if it was a fact that the Council paid 18,000*l.* a year in rent or buildings outside the County Hall?

Colonel Rotton said that was so. Within the last few years their staff had doubled.

On a recommendation to take further premises for the housing of the staff,

Mr. Pigott moved that the recommendation be referred back, and pointed out that it was time the question of a proper home for the Council was settled. The present state of affairs was unjust to the staff and unjust to London.

Captain Hemphill seconded the amendment, which, after discussion, was withdrawn, and the recommendation was agreed to.

Fires in Oilshops.—The Fire Brigade Committee called attention to the recent fatal fire at an oilshop in Judd-street, Brunswick-square. Three persons occupying rooms on the third floor were suffocated. The committee suggested that the Building Act Committee should consider the desirability of so amending the London Building Act as to provide for the fire-proof separation of oilshops from living and sleeping rooms, and for ready escape from such premises.

Mr. Gilbert, chairman of the committee, observed that most of the oilshops in London were nothing but death-traps in case of fire.

The report was adopted.

Tenders.—The tenders of Messrs. Ellis, Pollen, & Co., to execute for 111*l.* 10s., 102*l.* 11s., 113*l.*, and 73*l.* 17s. the wiring, and to supply the fittings for electric light installations at the West Hampstead, East Greenwich, and Perry-vale stations, and the Homerton sub-station respectively were accepted.

Having transacted other business, the Council adjourned.

APPLICATIONS UNDER THE 1894 LONDON BUILDING ACT.

THE London County Council on Tuesday dealt with the following applications under the London Building Act, 1894. Unless otherwise stated, consent was given on conditions. The names of applicants are given between parentheses :—

Lines of Frontage and Projections.

Dulwich.—A one-story bakehouse at No. 10, Alleyn-terrace, Park-road, Dulwich, to abut upon South Croxted-road (Mr. F. C. Bodley for Mr. L. French).—Consent.

Hackney, North.—Two one-story shops on part of the forecourts of Nos. 91 and 91A, Upper Clapton-road, Hackney (Mr. W. H. White).—Consent.

Hammersmith.—That the application of Mr. W. G. R. Sprague for Mr. J. B. Mulholland for an extension of the period within which the erection of a theatre building on the north side of Hammersmith-road, Hammersmith, at the corner of Rowan-road, was required to be commenced, be granted.—Agreed.

Lewisham.—Wood and tile pents to the entrances to fourteen houses on the west side of Homecroft-road, Sydenham (Mr. F. B. Colvill).—Consent.

Lewisham.—Wood and tile pents over the entrances to four dwelling-houses on the south side of Stillness-road, Brockley-rise, Lewisham (Mr. H. Lillywhite).—Consent.

Strand.—The retention of an iron and glass stallboard light and a parapet wall in front of No. 46, Great Marlborough-street, St. James's (Messrs. Dunn & Watson for Mr. C. H. Smith).—Consent.

City.†—An iron and glass shelter at the entrance to the Saracen's Head Hotel, Snow-hill, City (Messrs Wilkinson & Parker for Mr. F. Dredge).—Refused.

Hampstead.—A block of residential flats on the northern side of Finchley-road, Hampstead, at the corner of West Hampstead-avenue (Mr. J. Reynolds).—Refused.

Hoxton.—An iron and glass shelter at the London Music Hall, High-street, Shoreditch (Mr. F. Matcham for the London Music Hall Co., Ltd.).—Refused.

Lewisham.—Houses in Brightside-road, Saravia-road, Elthurda-road, Nightingale-grove, and Mallett-road, Hither Green, Lewisham (Mr. G. Tolley for Mr. J. Laird).—Refused.

Lewisham.—A one-story shop on the forecourt of No. 141, Rushey Green, Catford (Mr. J. Laird for Mr. F. Hardstone).—Refused.

Marylebone West.†—Two projecting oriel windows at the rear of 30, Montagu-square, St. Marylebone, to abut upon Bryanston-mews East (Mr. G. R. Shaw).—Refused.

Strand.—A sign in front of the Lyric Theatre, Shaftesbury-avenue, St. James's (Mr. J. G. Buckle for Mr. T. B. Davis).—Refused.

Strand.—Two iron and glass shelters at the entrances to an extension of the Trocadero Restaurant, Shaftesbury-avenue, St. James's (Messrs. J. Lyons & Co., Ltd.).—Refused.

Wandsworth.†—Buildings on the north-west side of Balham High-road, Balham, on the site of Russell House (Messrs. Bourchier, Burmester, & Galsworthy for Mr. J. W. Holdron).—Refused.

Width of Way.

Southwark, West.—Three warehouse buildings at Greenmore Wharf, Nos. 41, 43, and 44, Bankside, Southwark, with the external walls of such buildings at less than the prescribed distance from the centre of the street (Mr. W. A. Lewis for Messrs. Cranbourne & Cranbourne).—Consent.

Hammersmith.—The retention of boundary wall at less than the prescribed distance from the centre of Albert-road, Hammersmith (Mr. M. W. Hervey for the West Middlesex Waterworks Co.).—Consent.

Rotherhithe.—A store building on the east side of Dock-passage, Surrey Commercial Docks, Rotherhithe, with the external walls at less than the prescribed distance from the centre of the street (Mr. J. S. Gaskell for the Surrey Commercial Dock Company).—Refused.

Width of Way, Lines of Frontage, and Projection.

Marylebone, West.—One-story addition in front of the coach-house at No. 9, Gloucester-mews West, St. Marylebone, with the external walls of such addition at less than the prescribed distance from the centre of the street (Messrs. W. Phillips & Son for Mr. E. E. Greenwell).—Consent.

Hampstead.—A motor-car house in the grounds of "Moreton," Holly-place, Hampstead (Mr. W. Woodward for Mr. T. E. Sidney).—Consent.

City.—An oriel window at the first, second, and third floor levels in front of Nos. 59 and 60, Old Bailey, City (Mr. R. Plumbe for the Trustees of the United Kingdom Band of Hope Union).—Consent.

Limehouse.—A projecting turret to the Alexandra wing of the headquarters of the British and Foreign Sailors' Society, on the west side of Beccles-street, Commercial-road East, Limehouse (Messrs. Niven & Wigglesworth).—Refused.

Clapham.—One-story shops on the forecourts of Nos. 114, 116, 118, and 120, Clapham Park-road, Clapham, at the corner of Abbeville-road (Mr. H. G. Brace for Mrs. E. M. Jewell).—Refused.

Marylebone, East.—A church, with projecting porch and buttresses, on the west side of Glentworth-street, at the corner of Upper Park-place, St. Marylebone (Messrs. W. Bucknall & J. N. Comper for the Rev. G. F. Forbes).—Refused.

St. Pancras, East.—Iron and glass shelters at the entrances in Crowndale-road and Bayham-place, to the Camden Theatre, High-street, Camden Town (Mr. W. G. R. Sprague for the Camden Theatre, Limited).—Refused.

Space at Rear.

Chelsea.—A modification of the provisions of Section 41 of the Act with regard to open spaces about buildings, so far as relates to the proposed erection of a block of residential flats on plots Nos. 1 to 4 Cheyne-walk, Chelsea, at the corner of Beaufort-street, with an irregular open space at the rear (Mr. J. Ross for the Town and Gown Association, Limited).—Consent.

Width of Way, Lines of Frontage and Construction.

City.—An iron and concrete gangway across Bull's Head-passage, City, to connect Nos. 93 and 97, Wood-street (Mr. A. Conder for Messrs. Dent, Allcroft & Co.).—Consent.

Hackney, Central.—The retention of an iron shed at the rear of No. 358, Kingsland-road, Hackney, to abut upon Haggerston-road (Messrs. D. Gilson & Co.).—Refused.

Width of Way and Space at Rear.

Woolwich.—That the Council do make no order with respect to the application of Mr. H. Roe on behalf of Mr. W. Sutch, for consent to the erection of three houses on the west side of Barnfield-road, Plumstead.—Agreed.

Formation of Streets.

Lewisham.†—That an order be issued to Mr. W. B. Hill sanctioning the formation or laying out of two new streets for carriage traffic on the Grange estate, Sydenham-road, Lewisham. That the names Sunnydene-street and Highclere-street be approved for the new streets.—Agreed.

Bethnal Green, South-West.—That the application of Messrs. Davis Brothers for an extension of the period within which the roadway of a new street for carriage traffic to lead from Bethnal Green-road to Old Bethnal Green-road, Bethnal Green, was required to be clearly defined throughout by posts and rails or so otherwise as the Council should permit, and be thrown open to the public as a highway, be granted.—Agreed.

Means of Escape from Top of High Buildings.

Newington, West.—Means of escape in case of fire, proposed to be provided in pursuance of Section 63 of the Act, on the top floor of an extension on the southern side of Rowton House, Newington Butts, Newington (the upper surface of which floor will be above 60 ft. from the street level), for the persons dwelling or employed therein (Mr. H. B. Measures for Rowton Houses, Limited).—Consent.

St. George, Hanover-square.—Means of escape in case of fire proposed to be provided in pursuance of Section 63 of the Act, on the top story of the southern portion of a block of residential flats on the west side of Harewood-place, St. George, Hanover-square (the upper surface of the floor of which story is above 60 ft. from the street level), for the persons dwelling or employed therein (Mr. P. Hoffman for Mr. H. Lovatt).—Consent.

Buildings for the Supply of Electricity.

Hammersmith.—An open shed at the electric lighting station, Fulham Palace-road, Hammersmith (Mr. H. Mair for the Council of the Metropolitan Borough of Hammersmith).—Consent.

Norwood.—The retention of a wooden cooling tower at the company's works, Bengeworth-road, Loughborough Junction (Messrs. Kincaid, Waller, & Manville for the South London Electric Supply Corporation).—Refused.

Lambeth, North.—Two iron and glass structures to carry circular fans to be used for ventilating the engine-room at the generating station, 85, Commercial-road, Lambeth (Mr. W. B. Pinhey for the Charing Cross and Strand Electric Supply Corporation, Limited).—Refused.

Cubicle Extent.

Southwark, West.—The erection on the east side of Dantzic-street, Borough-road, Southwark, of a building to exceed in extent 250,000, but not 450,000 cubic feet, and to be used only for the purposes of the manufacture of printing machines (Messrs. R. Hoe & Co. for Mr. R. Hoe).—Consent.

Cubicle Extent and Construction of Building.

Poplar.—The retention at Glengall-road, West Ferry-road, Poplar, of a shed which, together with the building to which it is attached, exceeds in extent 250,000 but not 450,000 cubic feet, and to be used only for the purposes of the manufacture of rope (Mr. R. C. Murray for Messrs. J. & E. Wright, Ltd.).—Refused.

The recommendations marked † are contrary to the views of the Local Authorities.

THE STUDENT'S COLUMN.—Our Student's Column article ("Gas and Gas Fittings") is held over until next week.

Correspondence.

To the Editor of THE BUILDER.

ECCLESIASTICAL DILAPIDATIONS.

SIR,—With regard to your "Note" *re* "Ecclesiastical Dilapidations" in your issue of November 2, that there should be compulsory periodical surveys of clerical buildings—this matter was discussed in evidence before a Committee of the House of Commons "to inquire into the administration of the Dilapidations Act," in 1876; and it was found that the estimated cost to the clergy in fees alone for surveyor, diocesan officials, &c., would be 30,000*l.* a year, if every benefice having buildings belonging to it were surveyed every five years. I suppose it was this report that prevented five-yearly compulsory surveys from being adopted; and in view of the fact that a large number of clergy keep their buildings in fair order without periodic surveys. It is certain, however, that there will soon be a change in the Dilapidation Act as at present administered, and the best method would seem to be for the Bishop to require each of his Rural Deans to report on the state of buildings in his Rural Deanery, so that in the case of buildings showing obvious neglect he could order a compulsory survey. This would be an encouragement to incumbents to keep their buildings in fair repair as by so doing they would avoid surveyors' fees. Mr. De Bock Porter's scheme of centreing all administration of dilapidations in a large London office would be too drastic and open to obvious objections. The only serious hardship to be overcome is, that an incumbent at present is able to neglect his buildings, so that if he dies with no assets a large sum is chargeable to whoever succeeds to the living, as mentioned in your paragraph.

GERALD COGSWELL, A.R.I.B.A.

A RIVERSIDE MEMORIAL CHAPEL.

SIR,—The reference in your last issue to the strange disuse of the Thames for displays and processions prompts me to ask—what others may have already asked, but if so, it has escaped my notice—if it has been suggested that the Millbank clearance between the Houses of Parliament and Lambeth Bridge would provide a fine site for the erection of a riverside memorial chapel? This would surely be a more suitable spot than the often proposed addition to the Abbey—often proposed, but as often condemned.

With amply planned water-stairs and terraces, there should be opportunities here for impressive spectacles, and the approach by water of a stately funeral procession would fitly typify our British love for the sea.

W. GANDY.

FINISHING A DWELLING HOUSE.

SIR,—May we be allowed to say with what very considerable pleasure we have read the above interesting paper by Mr. Davis in your issue of the 16th. One point at least, however, seems to have been overlooked by its writer, which we think will appeal to all practical minds, viz., the lack of consideration given (generally speaking) by architects to the needed space that should be provided for the free and proper placing and use of inside and outside blinds.

Many times it is found, after the completion of a most charming building, that the casements made to open inwards, with the transom fanlight and its perhaps necessary but most unsightly opening gear, prevent the use of any kind of rolling or venetian blind, so that the lady of the house has to in the end be satisfied with the new fangled collection of small pieces of cloth and strings called casement curtains, arising wholly from want of thought in anticipating the ordinary conditions of use of and necessity of inside blinds, especially in town houses.

The trouble, however, becomes worse in houses when the casements and fanlights open outwards, and where outside blinds for sunny aspects are needed, for in such cases (especially when the window heads are made to run up close below an eaves gutter) it is often found *impossible* to fix a sun blind till the sashes have been rehung, or at least rearranged.

Please let this be a further plea for the lifting sash, not only on account of the nice adjustment of ventilation that is ensured by its use (and so feelingly put by the writer of the paper), but that either inside or outside blinds, and the customary curtains, may at all times be adapted and used.

We venture to address you at this length solely because we feel that blinds, though a small item as regards cost in "finishing a dwelling-house," form no small detail in assuring that comfort, quiet, and privacy that every owner of a house should receive the benefit of in return for his outlay.

OLD READERS.

MANCHESTER FIRE STATION COMPETITION.

SIR,—After waiting over two months for the result of this competition to be announced, we

wrote to the Town Clerk of Manchester on the 6th inst. as follows :—

"Dear Sir,—Will you kindly let us know when we may expect to hear the result of the Assessor's award in the Fire Station Competition, and also the name of the Assessor.'

In your issue for the 9th inst. we noticed the result of the Watch Committee's decision, and again wrote the Town Clerk on the 9th inst.:—

"*Fire Station.*

Dear Sir,—In a further reference to our letter to you of the 6th inst., which remains unacknowledged by you, we notice a few meagre details of the result of the above competition in this week's issue of the *Builder*.

We shall be glad to know whether the designs will be on view to the public or the competitors, and whether the competitors can obtain or see a copy of your professional advisor's report and be informed of the name of that gentleman."

This letter also remains unacknowledged up till now, and we are sending you this correspondence to show the cavalier manner in which the Manchester authorities are treating architects in this competition.

The letters could surely have received a formal acknowledgment, and competitors ought to be informed of the number of designs received, the assessor's name and his award, and whether the designs would be on view.

Two months also appears to be an unconscionable time to take to adjudicate on the designs received, and in the interests of architects who enter competitions, we think a protest should be made against this treatment, and a time limit be fixed in which the award would be made known, for when all information is so persistently withheld, as in the present instance, one cannot refrain from suspecting the bona-fides of the promoters.

S. B. Russell and C. E. Mallows.

November 13.

BOOKS RECEIVED.

A History of Architecture on the Comparative Method. By the late Professor Banister Fletcher and Banister F. Fletcher, A.R.I.B.A. Fourth edition; revised and enlarged. (B. T. Batsford.)

British Sculpture and Sculptors of To day. By M. H. Spielmann (Cassel & Co.)

The Pavement Artists of Siena. By R. H. Hobart Cust, M.A. (Geo. Bell & Sons.)

OBITUARY.

M. Chipiez.—We greatly regret to announce the death of the eminent French architect M. Charles Chipiez, whose name, in conjunction with that of his collaborator M. Perrot, is so familiar to English architectural readers in connexion with their joint publications on ancient architecture. M. Chipiez was sixty-six years of age at the time of his death. He was a former pupil of Constant Defeux and of Viollet-de-Duc. In 1872 he obtained the first premium in competition for the design for the war monument at Buzenval. He was well known both for his numerous publications and also for some excellent work in the restoration of ancient buildings. Among his works in modern architecture may be mentioned the national primary and technical schools at Armentières. M. Chipiez had been for twenty-seven years a member of the Société Centrale des Architectes Français.

Mr. Porter.—We regret to announce the death at his residence, Moyle Tower, Hythe, Kent, on November 17, in his eighty-first year, of Mr. Frederick William Porter, J.P., F.R.I.B.A., formerly of No. 16, Russell-square, London. Mr. Porter, who was District Surveyor for the Holborn and East Strand district, including St. Clement Danes, St. Mary-le-Strand, St. George-the-Martyr, St. Paul, Covent Garden, &c,, became an Associate of the Royal Institute of British Architects in 1850, was elected a Fellow in 1855, and served for some while as a member of the Council. Of his more principal architectural works we may mention those following:—The Union Bank Chambers, Carey-street, W.C., the carving being by Mr. Kelsey (1866); the Union Bank of London, Charing Cross, at the corner of Spring-gardens, erected on the site of Farrance's noted confectionery shop and illustrated in the *Builder* of April 20, 1872; St. James-the-Apostle Church, Prebend-square, Packington-street, Islington, built by the Clothworkers' Company in 1874-5, for 500 seats, at a cost of about 10,000*l*., to replace Lambe's Chapel, Monkwell-street, pulled down in 1875; the London and Westminster South Kensington branch bank, Brompton-road (the carving and sculpture by Mr. Kelsey), illustrated in the *Builder* of November 21, 1885; No. 16, Newman-street, W. (Messrs. F. W. Porter & Hill), 1892-3; the hall and gymnasium, presented by Mr. Howard Morley in memory of his father the late Mr. Samuel Morley, for the Young Women's Christian Association, at No. 26, George-street, Hanover-square, W. (Messrs. F. W. Porter & Son), 1897; and, as we understand, the church of St. Anne, in Thorburn-square, Bermondsey, with seating accommodation for 1,000 persons, consecrated on July 20, 1870. He was architect also of the Union Bank of London branch office in Chancery-lane (1864-5), and, as we are informed, of that bank's chief offices in Princes-street, E.C.

GENERAL BUILDING NEWS.

Church, Stirchley, Birmingham.— The new Church of the Ascension at Stirchley was dedicated recently. The building is a structure erected from the designs of Mr. W. Hale, the walls of which are of red brick, with outer dressings of terra-cotta. The internal piers, arches, and dressings are in selected Farleigh Down Bath stone, and accommodation is provided for 578 adults. The nave is 82 ft. long by 35 ft. wide, with north and south ambulatory aisles, each having five low arches from the nave. The chancel is 32 ft. 6 in. by 22 ft., and on the south side are the clergy and choir vestries, the latter of which is carried up as a tower, in which are the organ chamber, ringing loft, and belfry with provision for eight bells. At the western end of the nave, and connected with it by a triple-arcaded and traceried opening, is an apsidal-shaped baptistry. The chancel has a seven-light east window, and two lights on the north side and one on the south. The roof is waggon-shaped, and divided into panels.

Church, Walsall.—On the 2nd inst. the foundation-stone was laid of a new church which is to be erected at Palfrey, Walsall. The church is to take the place of an iron structure which has done duty as a mission church in connexion with Caldmore parish, and a new parish is to be formed. The contract has been undertaken by Mr. W. Hopkin, of Birmingham, for 4,400*l*., the architects being Messrs. J. E. K and J. P. Cutts, of London.

Church Extension, Gainsborough. — At a meeting of the Enlargement Committee, in connexion with St. John's Church, Gainsborough, Mr. J. T. Micklethwaite, architect, of London, attended, and the alternative schemes for enlarging the church were discussed. It was eventually decided to lengthen the nave by three bays, and to construct temporary side aisles, the cost being estimated at over 2,000*l*.

Marlston Church, Berks.—This building has recently been enlarged. The church, as enlarged, now consists of a nave 45 ft. long and a chancel 22 ft. long inside, both of equal width of 18 ft. The old walls were underpinned to a depth of 5 ft. below the floor with solid brickwork in cement, and a damp-proof course was inserted to prevent dampness. For the same purpose proper drainage has been put all round the church. The principal ancient feature of the church is a doorway on the north side, which has hitherto been blocked up. This has been opened out, the stonework repaired, and an oak door now fills the opening. The old oak roof of the nave has been stripped and overhauled without at all interfering with its ancient parts; the oak timbers have been strengthened and repaired, and the whole covered with oak boarding exposed on the inside. A modern stone turret at the west end has been removed, and a square turret of oak has been added. The new chancel is an extension of the church, corresponding to the nave in width and height, the separation between the two being marked within by an arrangement of oak timber framing. The chancel roof is of oak, and in general character is similar to the old roof of the nave. The chancel stalls are of oak, with poppy heads and carved traceried panels. The chancel steps are of polished Devonshire marble, and the floors are of encaustic tiles. On the south side of the chancel, within a window recess, there is a stone sedilia with credence. Against the east wall is a carved reredos of Corsham stone with marble panels, and in the centre panel is a marble cross. Above is a three-light traceried east window, which has been filled with stained glass executed by Mr. C. E. Kempe. It represents the "Nativity of our Lord," in the bottom of the central light being the figures of the Infant Child and Virgin Mother. Upon a scroll in the south light is the inscription. The vestry is on the north side, and there is a heating chamber beneath. The nave seats are of oak, and the floors, where seats occur, are of wood blocks on a concrete foundation; the other nave floors are paved with small red geometrical tiles. A new octagonal font has taken the place of a small bowl which formerly existed. The church is heated with hot-water radiators on the low-pressure system, supplied by Messrs. Fox & Son, of Finsbury; the reredos was executed by Mr. H. Frith, of Gloucester; the wrought metal work is by Messrs. Chew & Sons, of Stroud; and the building works have been carried out by Messrs. Alfred Groves & Sons, of Milton-under-Wychwood, all from the designs and under the supervision and direction of Mr. S. Slingsby Stallwood, F.S.A., of Reading.

Church, Jesmond.—The foundation-stone of the new Church of St. Barnabas, in Goldspink-lane, Newcastle, was laid recently. The church is to be built of Byker stone. The whole of the roofs and internal wood fittings are to be of pitch pine. The walls will be plastered on the inside. The plan consists of nave and chancel, with narrow north and south aisles containing passages, clergy and choir vestries, and organ chamber and heating cellar below, with raised floor at the east end. The nave and chancel are lofty, and have apsidal ends, and include a clearstory of three-light windows. The north and south aisles are capable of future extension. The total length of the church is 137 ft. and its present width 40 ft.; but its width when the aisles are extended would be 57 ft. A tower and spire, rising to a height of 160 ft., will be the principal feature when completed, but at present only the lower portion of the tower is to be built. There will be sitting accommodation for about 450, but the extension would provide another 250, making 700 altogether. The contractors for the work are Messrs. William & George Henry Scott, of Sunderland. Messrs. Hicks & Charlewood, of Newcastle-on-Tyne, are the architects.

Parish Church, Fortingall, Perth.—The foundation-stone of the new parish church at Fortingall was laid by Lady Curry of Garth recently. The new church is being built on the site of the old church, but is thrown back 6 or 7 ft. in ground taken from the garden of the manse. The new building is practically the same size as the old one, and will have sitting accommodation for 200 worshippers. It will consist of nave and chancel. The walls will be in oak panelling to a height of 5 ft., and above this the stone will be exposed. The roof will be wholly in oak. The pulpit and seats will also be in oak. The architects are Messrs. Dunn & Watson, of London.

Tynecastle Church, Edinburgh.—A new church has been built close to the adjoining tenements of Gorgie-road, Edinburgh. The church has a frontage of 66 ft., and to secure better light for the portion of the interior darkened by the tenements, two entrances are provided, one near either extremity. The building consists of nave, 91 ft. by 29 ft., and aisles 64 ft. long, the total width being 51 ft. These divisions are indicated on the front by buttresses of varied size but the same projection, finishing at the top with pinnacles and carved finials. One larger than the rest is completed as a belfry. Vestibules and gallery staircases are provided in the entrances, and below the circular arch which carries the east staircase is a pend, open to the passage leading to the hall behind the church. The design is by Messrs. Hardy & Wight. The doorways have moulded piers, with engaged pillars and arches to correspond. The gallery at this end is lighted by a window 20 ft. by 10 ft. The interior has a ceiling boarded nearly to the ridge both in nave and aisles. The church is seated for 1,000, including choir and elders' seats. A Communion table and chairs in oak and a stone font have been gifted to the church, which will cost under 4,000*l*.—*Scotsman*.

St. Michael's Church, Edmonton.—This new church, of which, together with the vicarage, Mr. Caröe is the architect, and of which the foundation-stones were laid on October 5 last, will provide sittings for a congregation of 730. The church has been established with a sum of 12,000*l*. allotted by the Ecclesiastical Commissioners out of the proceeds of the sale of the site and materials of the Church of St. Mary Bassishaw, in the City of London, and will replace the present mission church of St. Barnabas erected twenty years ago.

Restoration of Moulton Church, Norfolk. —After being closed for five months, the church of Moulton St. Mary was re-opened recently. The work of restoration has been carried out by Messrs. Hawes, of Norwich, under the direction of Mr. Arthur S. Hewitt, of Great Yarmouth, and includes a new open roof and flooring to the nave, with new benches instead of the old high pews, repairs to walls and windows, and the cleaning of the Jacobean pulpit and the Early English font. In the course of the work some interesting discoveries have been made, chief among which are a set of early mural paintings representing the "Works of Mercy," and a colossal painting of St. Christopher. A small brass effigy and inscription has also been discovered hidden under the floor.

Schools, Aberdeen. — The Education Department have approved of the plans for the enlargement of the Central School into a high-grade public school and pupil teachers' institute, the enlargement taking the form of a new building facing Schoolhill and Belmont-street. The design is Renaissance in character. The frontage along Schoolhill will be about 160 ft., and along Belmont-street about 145 ft., and both will be similarly treated. The estimated cost of the building, exclusive of heating and furnishings, is 22,500*l*. The plans and designs of the building, and also of the heating, ventilating, and furnishings, have been prepared by Mr. J. A. O. Allan, the architect of the School Board.

Building in Bradford.—The Building Committee of the Bradford Corporation during the twelve months ending August 31 approved 445 plans out of 1,160 deposited. Included in the plans approved were 1,145 dwelling-houses, twenty-one houses and shops, twelve warehouses, four mills, sixteen workshops, two places of worship, twenty-five lock-up shops, fifty-four streets, and ninety-two back roads. Plans were also approved for five Board schools, two Poor Law relief stations, two tall chimney-shafts, and the electricity generating station. There was more activity in the building trade than in the previous year, but less than in either 1898 or 1899.

Kesteven Asylum, Rauceby, Lincolnshire.—Advantage was taken of the practical completion of the new County Asylum at Rauceby to hold the quarterly meeting of the Kesteven County Council there on the 13th inst. The asylum, which stands in an estate of 115 acres—the actual buildings cover-

ing over seven acres—has cost 166,000*l.*, and will accommodate 500 patients. The Kesteven authority formerly had a share in the County Asylum at Bracebridge, near Lincoln, but owing to the rapid increase in the number of patients, and the great difficulty in finding accommodation, it was deemed necessary to erect a separate asylum for Kesteven. The most modern ideas regarding the treatment of the insane have dictated the arrangement of the buildings, which were planned by Mr. G. T. Hine, of London, and have been erected by Messrs. Kirk, Knight, & Co., of Sleaford. The patients' blocks are placed in the brightest and most sunny aspects, and the quarters of the staff and officers are conveniently situated. The equipment of the premises is on a liberal, if not lavish, scale, the furniture alone costing 10,000*l.* A feature of the institution is a theatre capable of seating 700 spectators. Another interesting department of the institution is formed by the laundry block, in which modern machinery will be used, the power being supplied by an electric motor. There is also a bakery on similarly up-to-date lines. A chapel stands detached from the main buildings, and it comprises nave and aisles, north and south transepts, an organ-chamber and vestry. The buildings are of Leicestershire red bricks with Ancaster stone dressings, the roofs being of Vermont green slate. The patients' block bulk largely in the façade, but between them are the quarters of the head nurse and housekeeper and the assistant medical officer. The administrative block is between these on the south and the front entrance on the north, and to the east of this are the attendants' quarters, which look into a large court. On the west are the quarters for the nurses, with another large court in front. Adjoining are the laundry, drying-ground, and mortuary. Each block has two entrances from the main corridors which are 9 ft. wide, paved with wood, and with a golden-brown dado of glazed brick. The floors and ceilings are fireproof, being laid by the Stuart Granolithic Co., and the lavatories are the work of Messrs. Doulton & Co. For water-supply purposes there is a tower upwards of 100 ft. high. The hot and cold water mains, condensers, &c., are placed in a large subway running under the main corridors. —*Yorkshire Post.*

NORWICH UNION LIFE OFFICE.—The foundation-stone of this building has just been laid. The architects of the building, which was illustrated in the *Builder* for April 13, are Messrs. G. J. & F. W. Skipper, of Norwich.

QUEEN'S EYOT, RIVER THAMES.—Plans and designs have been prepared for the authorities of Eton College by Mr. T. G. Jackson, R.A., for a club-house on Queen's Eyot or island, situated a short distance below Monkey Island, between Bray and Boveney Locks. The level of the northern portion of the island has been raised, some trees have been planted, and the foundations of the new clubhouse have been begun, the total estimated cost being 3,000*l.*, towards which 2,000*l.* is already subscribed. Consequent upon the recent sale of Surly Hall, on the Berkshire bank, near Boveney Lock, Queen's Eyot will henceforth serve as the resort and head-quarters of the Eton Boat Club.

THE UNIVERSITY LIBRARY, CAMBRIDGE.—The University Library Syndicate have approved of the plans prepared by Mr. W. C. Marshall for roofing in the east court of the library buildings, at an estimated cost of about 6,500*l.*

NURSES' HOME, SALISBURY INFIRMARY.—The Victoria Home for Nurses has just been opened. The Home is built of red brick with tiled roof, and the entrance for the nurses will be from the infirmary through a covered way. On entering the building a cloakroom will be found on the left, 19 ft. by 12 ft., fitted with lavatories, dressing-tables, and lockers. There are also a linen sorting-room and boxroom. The Home is lighted throughout with electricity and heated with hot water. On the right side of the corridor is the furnace-room with heating apparatus and hot-water supply, kitchen, and scullery for the use of the staff. The corridor leads into a hall, opening into which are sitting-rooms for the superintendent, head nurses and probationers. The superintendent's apartment is 18 ft. by 11 ft. 6 in., the nurses' 18 ft. by 18 ft., and the probationers' 28 ft. by 17 ft. On the first and second floors are forty-four bedrooms, varying in size from 18 ft. by 9 ft. 6 in. to 12 ft. by 8 ft. 6 in. The staircases are of stone, and provision is made for escape in case of fire by three iron ladders which are accessible from each floor. The upper floors are of Potter's patent fireproof construction. Telephonic and electric bell communication is established with the infirmary. The building has been erected from plans by Messrs. J. Harding & Son, the contractors being Messrs. Webb & Co., of Salisbury, while Mr. T. Dawkins, of Barford St. Martin, built the covered way.

DRILL HALL, HENDON.—A new drill-hall has just been opened at Hendon. The buildings consist of an armoury, an officers' mess, a sergeants' mess, recreation-room, a six-roomed house for the sergeant-instructor, and the drill-hall, measuring 90 ft. by 45 ft., providing drilling accommodation for two squadrons. The cost of erection has been 2,540*l.* The buildings were erected from the designs of Messrs. Nowell, Parr, & Kates, architects, of Brentford.

PRIVATE ASYLUM, DUNDEE.—The new building which the Directors of the Dundee Royal Asylum have erected at Westgreen is now almost completed. The building has been designed by Mr. T. S. Robertson, architect, Dundee, and has accommodation for about sixty patients. The style is Scottish Baronial, and in the erection of the building red stone from Ayrshire has been used in dressing, while local quarries have supplied the rubble. The centre part, containing the principal entrance, is of one story, and the wings to the front three stories, while to the back the wings are only two stories. The doorway is embellished with the Royal Arms, the Dundee Arms, and the Arms of Captain Clayhills Henderson, and is approached by a short balustraded staircase which leads from a wide terrace. The entrance hall will be used as a reception-room and also as a ballroom when occasion requires. The west wing is to be devoted to the male patients and the east wing to the females, and each is fitted up for its special purpose. Each wing has a large dayroom. In the men's there will be billiard-tables and other means of recreation, while the women's is to be furnished more after the manner of a drawing-room. There is another and smaller dayroom in each wing. The bedrooms are upstairs, and there are lavatories and bathrooms attached to the various sections of the building. The dining-room is situated immediately behind the entrance-hall, and is a large room with timber ceiling, lit with windows from both sides. The kitchen is immediately behind, and the scullery, pantry, and larder adjoin it. There is also the necessary accommodation for the matron and the servants. The building throughout is heated by steam and lit by electricity. The cost of the new asylum has been over 22,000*l.* The contractors were:—Mason, Mr. William Bennet; joiners, Messrs. D. P. How & Son; plumber, Mr. David Brown; plasterer, Mr. James Laburn; slater, Mr. A. Buttar, jun.; glaziers, Messrs. Lindsay & Scott; bells and blinds, Messrs. J. Pullar & Co.; heating, &c., Messrs G. H. Nicoll & Co.; firecocks and water pipes, Messrs. P. Nucator & Son; roads, Mr. Peter Girrity; carving, Mr. James Bremner; painters, Messrs. Petrie & Greig; drains, Mr. Peter Bain; electric lighting, Messrs. J. Muckersie & Co.; clerk of works, Mr. James Robertson.

DRILL HALL, BILSTON.—This building was recently completed. It is situate at Mount Pleasant, and is partly built on the site of the old drill shed. The building consists of a large hall with officers' and sergeants' rooms in front, while leading out of the hall at the back are the armoury, store room, kitchen and lavatories. Above the rooms in front, but with a separate entrance, are the quarters for the sergeant-instructor. The floor of the hall is composed of wood blocks, and the whole place has been wired for the electric light. Gas has also been temporarily laid on. The building is of red brick with stone facings, and the roof is of red tiles. Over the main door are carved the Royal Arms. Mr. H. T. Hare, of London, was the architect, and Mr. T. Tildesley, of Willenhall, has been the builder. The cost of the building will be 2,600*l.*

TEMPLE OF MUSIC, WOLVERHAMPTON EXHIBITION.—One of the principal buildings which will be erected on the site of the Wolverhampton Art and Industrial Exhibition is the concert-hall. It will have a raised floor, and accommodation is provided for an organ and a large number of performers. Within its walls some 2,000 people will be able to listen to the music. Messrs. Walker & Ramsay, of Glasgow, are the architects.

CHANCEL SCREEN, ST. NICHOLAS CHURCH, BRISTOL.—The new chancel screen which has been erected at St. Nicholas Church, Bristol, was dedicated recently by the Archdeacon of Bristol. The screen has a base of Bath stone, ornamented with six panels, each of which has a shield. Immediately opposite the centre aisle of the nave there are double gates of wrought iron embellished with Greek and Roman symbols. The top part of the screen is composed of wrought iron, worked with arcading, capped by a figured border. At the apex of the central arch is a cross, with the sacred monogram underneath. The decoration is being carried out by Messrs. Joseph Bell & Son, under the direction of the architect. Mr. W. V. Gough.

TOWN HALL, ALTRINCHAM.—Altrincham Town Hall, erected at a cost of 6,000*l.*, was opened on the 4th inst. The town hall was built from the designs of Mr. Charles Hindle (Manchester and Eccles), in the Jacobean style.

EXTENSION OF BIRMINGHAM HOMŒOPATHIC HOSPITAL.—An extension of this building is nearing completion. Having decided to increase the accommodation, the work was placed in the hands of Messrs. Crouch & Butler, who made designs in keeping with the existing premises. Addition will be made to the ward accommodation, and the hospital, when the new wing is completed, will be able to provide beds for forty-two patients. But the extension applies principally to the administrative block, and here better provision is being made for the staff. The extensions, which will cost close upon 5,000*l.*, include, in addition to a few extra wards, a board room and lady superintendent's office, considerable additions to the servants' hall and kitchen, improved accommodation in the way of bedrooms, sitting and dining rooms for the staff, and apartments for the lady superintendent.

NEW BUILDINGS, LEEDS HOSPITAL FOR WOMEN AND CHILDREN.—The erection of the new Hospital for Women and Children in Leeds has been begun. According to the plans of Messrs. Chorley, Connon, & Chorley, the present building will be incorporated in the scheme. This has been rendered possible by the fact that for the present a maternity department is not included. Until sufficient funds are forthcoming to enable the Committee to rebuild the present structure it will be used for a children's ward, and for accommodation for the nurses and servants, as well as for the kitchen department. The new portion will comprise a hospital with accommodation for fifty beds, and an out-patient department.

FIRE STATION, SALFORD.—The Corporation of Salford recently determined to erect a new central fire station in Albion-place, the Crescent, to accommodate the men, horses, and appliances in comfort and convenience, and they applied to the Local Government Board to borrow 26,285*l.* for the purpose of erecting the new station. Colonel W. Langton Coke, M.Inst.C.E., held an inquiry on the 8th inst., at the Salford Town Hall, into the application. There were present Alderman Shaw, chairman of the Fire Brigade Committee; Mr. Corbett, Borough Engineer; Mr. H. Kirby, architect appointed to draw the plans; and others.

WESLEYAN LECTURE-HALL, CHELTENHAM.—A lecture-hall, with a seating capacity of 250 seats, and a church parlour in connexion therewith, have been added to the Wesleyan chapel and schools, St. George's-street, Cheltenham. The building has been erected by Mr. Amos Wilson, of Cheltenham, from the plans of Mr. Arthur Geo. Dalzell, architect, of Halifax, and Mr. Thomas Malvern, surveyor, of Cheltenham, has superintended the work during the course of construction.

GRAND OPERA HOUSE, YORK.—A new theatre is being erected on the site of the old Corn Exchange, York. It will occupy when completed an area of upwards of 13,000 sq. ft., and will have frontages to Clifford-street, King-street, and Cumberland-street. The architect is Mr. John P. Briggs, of London. The building is being constructed mainly of red brick and terra-cotta. A complete plant for electric lighting is to be laid down. Mr. F. Sheppard, of York, is the contractor for the building, and Mr. S. King Sheldon is acting clerk of works.

SANITARY AND ENGINEERING NEWS.

ELECTRIC LIGHTING WORKS, HECKMONDWIKE.—These works are rapidly approaching completion. The station is situated in Bath-road, and is part of a building which is also being adapted for the purposes of public baths and fire station, and which extends into High-street. The *Batley Reporter* states that the original scheme provided for two water-tube boilers, made by Messrs. Stewart & Co., each capable of evaporating 4,000 lbs. of steam per hour, with a working pressure of 160 lbs. to the square inch, and also capable of working safely up to 200 lbs. In view of the extensions required for the purposes of the British Electric Tramway Co.'s scheme, the Town Council are also installing one of Messrs. Babcock & Wilcox's water-tube boilers, to work at the pressure above named, and with a capacity for evaporating 9,000 lbs. of steam per hour. This boiler has also a super-heater. The Green's economiser of ninety-six tubes fixed in the main flue will heat water up to 230 deg. before it goes into the boiler. Two boiler feed pumps have been fixed, each capable of supplying 1,500 gallons of water per hour, one being of the Blake Knowles' type, and driven by steam, and the other a three-throw pump by the same maker, driven by electric motor. Each boiler is fitted with an injector. The main steam piping is of lap-welded steel, and is supplied by the same makers as the boilers, whilst the valves are of the Hopkinson make. The two steam generators are each capable of developing 75 kilowatts, and they will run at 460 revolutions per minute, and are both capable of developing 25 per cent. overload without injury. The engines were made by Messrs. Reavel & Co., Ipswich. The generators, &c., are by Messrs. Fowler & Co., of Leeds, and work at from 460 to 500 volts. Storage batteries are capable of discharging at the rate of 160 ampères for three hours, and were made by the Tudor Accumulator Co. The main switchboard, with the usual instruments and switches, is by Mr. Bertram Thomas, of Manchester. An overhead travelling crane has been erected in the engine-room, for use when the larger engines are put into the works at some future time. About 5,000 yds. of underground mains have been laid in the principal thoroughfares of the town by Henley's Telegraph Works Co., London, who are also supplying existing gas lamps with the electric glow lights. Along the entire route of the electric cable these glow lamps will take the place of gas for public lighting, and ten "M.D." arc lamps by Messrs. Foote & Milne, London, are being placed in the centre of the town. These are enclosed arc lamps, and burn 150 hours without trimming. The station is being lit up by Mr. Fred Spivey, of Heckmondwike. The plant is capable of supplying 6,000 8 c.-p. lamps, 3,100 of which have already been applied for. Mr. W. C. Hawtayne is the consulting engineer, and Mr. G. H. Carter the resident electrical engineer.

ELECTRIC LIGHTING, KING'S LYNN.—An addition

to the Corporation Electricity Works was inaugurated on the 23rd ult. The plant originally consisted of five gas engines, each driving a 40-kilowatt dynamo. These being found insufficient for the increasing demand for current, it was decided last year to add two high-speed steam engines, by Messrs Belliss & Morcom, coupled direct to the dynamos, by Messrs. Laurence, Scott, & Co., of Norwich, one of them of 120 and the other of 200 kilowatts. The smaller one was started in April last, and on the 23rd ult. the Mayor turned on steam to the larger one. The extensions are now complete with the exception of the second Lancashire boiler, which will be fixed shortly after Christmas. It was intended to run the steam plant in the ordinary course, keeping the gas engines as a reserve. The engineer is Mr. J. Palling, of King's Lynn.

PROMENADE, BLACKPOOL.—Colonel Durnford, an inspector of the Local Government Board, held an inquiry at Blackpool, on the 12th inst., into the Corporation's application to amend the Improvement Act of 1899, so as to allow the Promenade being widened 100 ft., at an increased cost of 40,000*l*. Mr. Fletcher opposed on behalf of William Eaves and others. The Town Clerk (Mr. T. Loftos) addressed the inspector for close upon an hour. Mr. J. S. Brodie, the Borough Surveyor, said he had had twenty-five years' experience in fighting the sea in some form or another. His previous experience had been at Liverpool and Whitehaven. He proceeded to say that the crowded state of the Promenade must convince any reasonable mind as to the necessity for its being widened. The existing form of hulking had been abandoned by almost all engineers, owing to its original cost, and its maintenance had been found to be excessive in the extreme. Blackpool had been an exception to the rule, for 52,000*l*. had been spent on repairing the present hulking. The face of the new hulking would be of basaltic stone, granite, and other hard rock. There would be a bull nose at the top extending 27 in. westward, and this, together with a spray of water from the top rail, would deal with drifting sand. Under the new roadway there would be a subway for all the electrical, &c., wires, so as to prevent the continual upheaval of the roads. The cost of a sloping hulking would be 60*l*. per lineal yard, and of the concave wall 30*l*. per lineal yard. The cost of maintaining the former would be three times that of the concave wall.—Mr. Sandyman, a Newcastle engineer, said he had considered the plans and the proposals of Mr. Brodie, and agreed entirely with them. The inquiry was adjourned.

PROPOSED NEW WORKS, WALLASEY FERRIES.—Colonel A. G. Durnford, R.E., an inspector of the Local Government Board, attended at the Public Offices, Church-street, Egremont, on the 15th inst., for the purpose of inquiring into an application of the Urban District Council of Wallasey for a Provisional Order to amend the Wallasey Improvement Act of 1872, to enable the Council to borrow (1) 5,200*l*. for the purpose of providing workshops in connexion with their ferries undertaking on land proposed to be leased from the Mersey Docks and Harbour Board; and (2) 11,000*l*. for general purposes of the ferries undertaking, being improvements and extensions at Seacombe Ferry.

FOREIGN.

FRANCE.—M. Guillotin, the President of the Tribunal of Commerce, has submitted to the Municipal Council of Paris a scheme for the transformation of the Champ de Mars, which includes retaining the two end portions of the Galerie des Machines, the centre being removed to allow of a view of Gabriel's facade of the Ecole Militaire.——A committee has been formed in Paris, with M.Gerôme as chairman, for the erection of a monument to the memory of the celebrated caricaturist Gavarni.——M. Dalou has been commissioned to execute a large allegorical bas-relief for the facade of the crematorium in Père Lachaise cemetery.——The jury in the competition at Soissons for a public abattoir has awarded the first premium to M. Félix Piat, of Paris.——A new pavilion is being erected at the Paris Observatory for special observations to be made simultaneously at Paris and at Greenwich.——Parliament is occupied with a scheme for a new line of metropolitan railway from the Place du Palais Royal to the Place du Danube.——Madame Lardin de Musset, sister of Alfred de Musset, has offered to the city of Paris a statue of the poet, on condition that it should be erected on the Place du Théâtre Francais.——The Government intend to rebuild the Imprimerie Nationale, which at present occupies an old historic house in the Rue Vieille du Temple, in the Grenelle district.——The Paris Municipality propose to re-erect, in one of the two squares adjoining the church of St. Germain des Près, some curious arcades preserved at the demolition of a house in the Rue de l'Abbaye, and which formerly formed a portion of the chapter-house of the Abbey of St. Germain-des-Près.——Several new Mairies in the suburbs of Paris are to be the object of important works in artistic decoration. Among them are those of Neuilly, Ivry-sur-Seine, and Choisy-le-Roi. The decoration is to consist of landscapes reproducing or suggesting views in the environs.

UNITED STATES.—The State of Michigan is about to replant with forest trees large tracts of sandy wastes whereon once grew what were thought some years ago to be inexhaustible forests of white pine It is the belief of American experts in forestry that had these forests been treated with reasonable care thirty years ago, there would still be an immense annual yield of timber from these now barren wastes. ——The report of the engineers, Messrs. E. Duryea, jun., and Joseph Mayer, on the condition of Brooklyn Bridge shows that that structure is in danger, due to the continually increasing loads placed upon it since it was erected, and it appears, from the action of officials also, that the bridge is unsafe.——The directors of the St. Louis Exhibition of 1903 invite architects to submit before July 1, 1902, a list of such works as the latter desire to exhibit, including drawings, &c., of completed buildings, designs and projects for buildings, paintings, and mural decorations.

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—The Electric Lighting Boards Company have removed their Sales Department to 9, Grosvenor-mansions, Westminster, which will be their principal depôt, and to which all inquiries as to goods should be addressed.——Messrs. Heron & Bellairs, architects, have removed their offices from 27, Fitzroy-street, W., to 27, Sackville-street, Piccadilly, W.

WEIGHTS AND MEASURES AND THE METRICAL SYSTEM.—An Order in Council of May 19, 1898, legalised certain new denominations of metrical standards derived from the iridio-platinum linear standard metre and the iridio-platinum standard kilogram as deposited in the Standards Department of the Board of Trade at Old Palace-yard, which have since been included in the official standards for purposes of the Weights and Measures Act, 1878. An Order in Council of November 4 current fixes the scales to be paid to inspectors in respect of the verification and stamping of weights, measures, and weighing instruments of the metrical system. For measures of length—a mètre and under, a double mètre, and a dekamètre, with their sub-divisions; of capacity—from 0·001 litre to a double dekalitre; and of cubical contents—from 1 cubical centimètre to 1,000 cubical centimètres, the scale of fees ranges from 1d. to 3d. The same scale is ordained for weights that range from 1 milligram to 20 kilograms, whilst the scale varies from 2d. to 10s. in the case of weighing instruments for from 0·5 kilogram and under to 10 tonnes, or 10,000 kilograms and above.

BIRMINGHAM MASTER BUILDERS' ASSOCIATION.—The annual meeting of the Birmingham Master Builders' Association was held on the 11th inst. at the Grand Hotel, Councillor F. G. Whittall presiding. In the report for the year the committee regretted that the falling off of trade referred to twelve months ago had become more marked, and much work that would probably not now be executed had been held back owing to the high prices of material and labour. The committee felt strongly that the present high rate of wages was no longer justified by the state of trade, and they had received from individual members many complaints as to the great inconvenience resulting from the present arrangement of several trades commencing and leaving off work at different hours. Consequently they had served notices on all trades for a general reduction of wages and for uniform hours of work. The Committee felt they would be voicing the opinion of every member of the Association by expressing to the Chancellor of the Birmingham University their regret that Birmingham architects had been excluded from a competition for the University buildings. The balance-sheet showed that the receipts for the year were 181*l*, which, with the balance from last year, made a total of 368*l*. The various disbursements amounted to 154*l*., leaving a sum of 214*l*. to the credit of the Association. In proposing the adoption of the report, the Chairman referred to the state of the trade, which, he said, continued to be unsatisfactory. The large number of workmen that called upon them to obtain work showed that trade must be in a very bad state. It was because of the condition of the trade that the Committee, after careful and anxious thought, had deemed it advisable to give notice for a reduction of wages. It had not been done to cause differences or disagreements in the trade, but for the purpose of trying, if possible, to stimulate trade, which had suffered through the high price of material and labour. A great deal of work had been put aside until it could be done more cheaply, and they considered the reduction of wages would be in the best interests of the trade and the workmen. He hoped the operatives would accept the reduction. The Committee had taken some amount of trouble and effort to assist the funds of the Birmingham University, and therefore they keenly regretted that the architects of the city had no opportunity of competing for the designs of the new building. Mr. W. Sapcote seconded the resolution, which was carried. Mr. Albert S. Smith was elected President for the ensuing year, and Mr. John Barnsley vice-president. Mr. G. Twigg was reappointed treasurer, Mr. E. J. Bigwood secretary, and Messrs. T. Johnson and J. S. Surman auditors. The Committee were also elected. In order to strengthen financially the position of the Association, it was decided that, from the commencement of next year, the annual subscription should be 1s. for each 100*l*. of wages paid during the previous year. The retiring President, Councillor F. G. Whittall, was heartily thanked for his services during the year. In the evening the annual dinner was held at the Grand Hotel. The Lord Mayor (Alderman J. H. Lloyd) presided. The customary loyal toast having been honoured, Major Barnsley submitted "The City and Trade of Birmingham." The Lord Mayor replied to the toast. He spoke of the necessity of looking ahead to prepare for the requirements of the city, and said that it was the support of the citizens that helped a city like Birmingham to keep abreast of the times. With regard to jerry-building, he said that whatever might have been the case in the past they did not have jerry-building in Birmingham now. Some of the builders might think that the by-laws were hard and strict, but he knew they themselves were anxious that buildings should be put up properly and well. He hoped as time went on some of the slums would be cleared out, and the buildings of the town improved. Mr. C. E. Bateman, in proposing "Success to the Birmingham Builders' Association," expressed the hope that some members of the Association would secure the contracts for the new University buildings. The President (Mr. A. S. Smith) replied, and referred to the proposal to reduce the operatives' wages. The Association, he said, was not formed for the purpose of cutting down the men's wages, and they regretted that it was necessary to interfere with them. No one grudged the operative a good wage, but what they did resent very much was that restriction of output, that constant lessening of the amount of work which the unions encouraged. Other notices had been served upon the operatives having reference to certain unreasonable restrictions in trade rules which they were glad to have an opportunity of discussing, and they sincerely hoped all the matters would be amicably settled.—The other toasts were "The Architects and Surveyors," "The National Federation of Building Trade Employers," and "The Visitors."

WAR MEMORIAL, BRISTOL.—It is proposed to erect at Bristol a memorial to some of the soldiers who have fallen in South Africa. It has been arranged that the memorial shall be placed in College Green, on a site selected by the Dean and Chapter. The design has been prepared by Mr. Fred. W. Marks, architect, of London. The obelisk will consist of a bold shaft of Swedish red polished granite, with decorative fluting and ornamental design on the lower part of its sides. The base on which this shaft will rest is to be of polished green granite, and this in turn will stand on grey granite steps. Its site is to be surrounded by twelve grey granite posts, connected by heavy bronze chains. Upon the monument will be the following inscription:—"This obelisk is erected to the memory of Christian Victor, Prince of Schleswig-Holstein, and to the officers and men of Gloucestershire, Somersetshire, and Devonshire Regiments, who fell during the Boer War, 1899-1901, by Alfred Mosely, born in this city." The canopied bronze tablets on the four sides of the base will be noticeable parts of the design; and there will be smaller tablets containing the names of engagements in which soldiers from the three counties took part. The obelisk will be 41 ft. in height from ground level to the top.

DANIEL OWEN MEMORIAL STATUE, MOLD, FLINTSHIRE.—The statue erected in Mold to the late Daniel Owen, the Welsh novelist, was unveiled recently by Lord Kenyon. The statue is in bronze, and, erected upon a pedestal of Flintshire stone, stands in front of the County Hall. The figure is life-size. The statue is the work of Mr. Goscombe John, A.R.A.

METROPOLITAN ASYLUMS BOARD.—An ordinary meeting of the Managers of the Metropolitan Asylum District was held at the offices on the Embankment on Saturday last, Mr. R. M. Hensley, the Chairman, presiding. A letter was read from the Local Government Board formally approving the plans of the Southern Hospital; promising an order authorising an expenditure of 284,312*l*. on that hospital, and the borrowing of that sum; stating that the loan should be repaid as to 264,312*l*. in thirty years, and as to 20,000*l*. in fifteen years; and that Managers would be expected to adhere as nearly as possible to the estimated cost in carrying out the works. At the last meeting of the Board it was decided to complete forthwith the permanent hospital at Joyce Green by the erection of the remaining twelve blocks and the isolation block for patients, and the Works Committee were instructed to advise the Managers as to the course to be adopted for giving effect to that decision. It was now resolved, on the recommendation of the committee, that, subject to the sanction of the Local Government Board, the Managers should accept the offer of Messrs. Leslie & Co., Limited, the contractors for the erection of Joyce Green Hospital, to erect and complete the remaining twelve pavilions, isolation hospital, and other works connected therewith at a schedule of prices based on their contract for the main portion of the hospital, in accordance with plans and specifications prepared by Messrs. A. & C. Harston, architects.

LEGAL.

ACCOUNTS INCURRED ON BUILDER'S BEHALF:

LIABILITY OF CLIENT AND ARCHITECT.

AT Brompton County-court, last Friday, before Judge Stonor, Mr. Frederick F. Scruby, English agent to the Lincrusta-Walton Company, Berners-street, W., brought an action against Mr. Thomas Dan Chapman, proprietor of the Wheatsheaf public-house, Goldhawk-road, Shepherd's Bush, W., claiming 23*l.* 16s. 9d. for Japanese wall-paper said to have been supplied to order.

Mr. A. W. Groser, counsel, appeared for the plaintiff, and Mr. J. Oliver, counsel, defended.

Counsel for plaintiff explained that the claim had been remitted from the High Courts. It appeared that in January last the plaintiff received a call from a Mr. Richardson, architect, Shepherd's Bush, who said that he was acting as architect to Mr. Chapman, in connexion with certain works of reconstruction, &c., at the Wheatsheaf, being carried out by a Mr. C. W. Knight, builder. Mr. Richardson spoke about certain expensive Japanese papers being supplied for the job, and when the plaintiff remarked that he was not acquainted with the builder, Knight, Mr. Richardson replied, "That is all right: you supply my client"—referring to the present defendant—"with the papers, and I, as the architect, will have moneys in hand before the final certificate is given, and I will see that you are paid." The plaintiff thereupon agreed, and Mr Richardson selected certain patterns. About three days later Mr. Chapman came with his architect and saw other patterns, and requested the plaintiff to send certain of the papers to the Wheatsheaf as soon as the builder sent word as to the quantity required. Subsequently Mr. Knight, the builder, wrote the plaintiff as to the quantity, and goods to the amount of 80*l.* odd were then supplied, and used at the Wheatsheaf. Off the account 35*l.* had been paid by a cheque drawn by the defendant. On May 11 the plaintiff was rung up on the telephone by Mr. Richardson, who said: "I want you to issue a writ against Knight, and if unsuccessful, then issue a friendly writ against Chapman, so that I may be able to show that I have paid for these goods." The learned counsel went on to describe this as "a very 'cute trick," for Knight was then on the verge of bankruptcy, and had the plaintiff sued him and failed to get the money, he could not afterwards have sued the present defendant. The plaintiff issued a writ against Knight, who, however, set out in an affidavit the relations existing between himself and Mr. Chapman, and the action was at once discontinued. Then the present proceedings were initiated.

The plaintiff bore out his counsel's opening statement.

Mr. Groser: The architect was, of course, the principal's agent.

The Judge: An architect would not necessarily have authority to pledge the principal's credit.

A duplicate of the document sent by Knight, giving particulars as to the quantity of goods required, was produced, when it was found that it began, "Please send me," &c. The receipt for the 35*l.* also was made out in Knight's name.

Mr. Charles William Knight, the builder referred to above, said that the plaintiff's action against him for the amount of the goods in question was discontinued as soon as it was known that he had become bankrupt. The goods in question were ordered by his foreman on his (witness's) behalf.

The Judge said it was useless for plaintiff's counsel to continue in face of the documents indicating that Mr. Knight had ordered the goods, and that the 35*l.* was paid on his behalf. No doubt, added his honour, the case was one of great hardship as regarded the plaintiff, but there was no liability on the part of Mr. Chapman, although there might be some on the part of Mr. Richardson. The documents relating to the case would have to be preserved. There would be judgment for the defendant with costs.

WIDOW'S CLAIM UNDER THE WORKMEN'S COMPENSATION ACT, 1897.

THE case of Sarah Bush *v.* G. E. Hawes came before the Court of Appeal composed of the Master of the Rolls and Lords-Justices Stirling and Mathew on the 14th inst, on the appeal of the applicant from a decision of the County Judge of Norwich, sitting as Arbitrator under the Workmen's Compensation Act, 1897. It appeared that the applicant was the widow of a labourer who, while working at Lowestoft on October 2, 1900, met with an accident which resulted in his death, under the following circumstances. The deceased was in the employ of Messrs. Hadley & Sons, who were sub-contractors of the respondent Hawes, who was building a new fish-curing factory. The actual work on which the deceased was employed at the time of the accident was a boiler-house, the roof of which had not been completed. The boiler-house without the foundations was 28 ft. 4 in. high and with the foundations 30 ft. 4 in. high. To the boiler-house was attached a chimney-stack 100 ft. high. The deceased while engaged in guiding a rope by which the roofing was being hoisted to the top of the boiler-house, stepped back, and in doing so placed his foot on a nail sticking out of a board, and afterwards died of lockjaw. His widow accordingly claimed compensation under the Act. The County-court Judge, besides finding that the man did not meet with the accident in the course of his employment, held further that his widow was not entitled to compensation because the building on which he was engaged at the time of his accident was not 30 ft. high within the meaning of the Act. Hence the present appeal of the applicant, on whose behalf it was contended that the chimney-stack was a part of the building, which was therefore upwards of 30 ft. high. As to the other point, said the appellant's counsel, it was thought the other side would admit that the man met with his accident in the course of his employment. There was a cross-appeal by the respondent, who argued that the County Court Judge was wrong in holding that the work upon which the deceased was engaged was not ancillary to, but a part of, the business of the "undertaker" (respondent).

At the conclusion of the arguments of counsel, the Master of the Rolls said he was of opinion that the cross-appeal must be allowed. The claim was made by the widow of a workman who met with an accident while working as the servant of a sub-contractor who had undertaken to put an iron roofing on a building erected by the respondent, the "undertaker." In order that the applicant might succeed in such a case—assuming that it had been shown that the accident arose out of the man's employment, and that the building was 30 ft. high—she must bring herself within the proviso of Section 4 of the Act, which was to the effect that the "undertaker" was not liable if it could be shown that the work upon which the man was engaged was merely ancillary or incidental to and not part of the business of the "undertaker." If the work (roofing in this case) was not part of the trade and business of the respondent, and he had not undertaken to do it, then the applicant had no remedy against the respondent. The County Court Judge had found as a fact that this work of iron roofing was not part of the trade or business carried on by a builder, but he said that the section did not apply in this case because the respondent was in the habit of doing this kind of work. There was no evidence of that, and the learned Judge was wrong in so holding. This was a complete answer by the respondent to the claim of the applicant. It was not necessary, therefore, to deal with the other questions raised in the case, but he thought that but for this decision that the work was ancillary to the business of the respondent the applicant would be entitled to recover.

The Lords Justices concurred, and the appeal of the applicant was accordingly dismissed, and the cross appeal of the respondent allowed.

Mr. W. M. Thompson appeared for the applicant, and Mr. F. Lowe for the respondent.

CITY NUISANCE CASE.

THE case of Parish *v.* the Mayor, &c., of the City of London came before Mr. Justice Joyce in the Chancery Division on the 14th inst., an action by the plaintiff, the lessee of premises, No. 8, Church-row, Aldgate, for a mandatory injunction against the defendants to compel them to pull down an urinal which was erected so close to the plaintiff's premises as to constitute a serious nuisance and injury to his property. It appeared that Church-row is a *cul-de-sac*, the plaintiff's premises being situated on one side at the end of the court, which formed a public thoroughfare for foot passengers. The defendants erected the urinal complained of under powers conferred upon them by Section 104 of the London Sewers Act 1848, and placed it at the end of the court, close to the wall of the plaintiff's premises, the entrance to it being only 2 ft. from the plaintiff's only doorway. The plaintiff's case was that the urinal was a serious nuisance to him, and that in consequence of it he could not let his premises. The defendants' case was that they were acting in the *bonâ-fide* exercise of their powers, which enabled them to erect such places for the accommodation of the public, and that in consequence of their action the condition of the court was much improved.

In the result his lordship came to the conclusion that the defendants had no power to erect the urinal where they had done, and that it constituted a nuisance to the plaintiff. He therefore made a mandatory order upon the defendants to remove the urinal within six weeks, and directed them to pay the costs of the action.

Mr. Hughes, K.C., and Mr. Percy Wheeler were counsel for the plaintiff; and Mr. Badcock, K.C., and Mr. J. Henderson for the defendants.

A BRICKLAYER'S LABOURER'S CLAIM UNDER THE WORKMEN'S COMPENSATION ACT, 1897.

THE case of Field *v.* Longden & Sons came before the Court of Appeal, composed of the Master of the Rolls and Lords Justices Stirling and Mathew, on the 15th inst., on the appeal of the defendants, Messrs. Longden & Sons, the employers, from the award of the County Court Judge of Sheffield, under the Workmen's Compensation Act, 1897.

The applicant was a bricklayer's labourer, injured by an accident in the course of his employment on October 29, 1900. His average weekly earnings at the time of the accident were 30s. The employers commenced making weekly payments to the applicant of 15s. a fortnight after the accident, and this was continued till April 10, 1901. A few days subsequently the applicant's solicitor wrote to the defendants a letter with reference to the accident, and stating that he would be glad to hear of an offer of compensation, and that his letter was to be taken as a notice of injury and a claim for compensation. The defendants replied that they were paying the applicant the full weekly allowance, and that they were willing to continue the payments during his incapacity. After further correspondence, the applicant mentioned a lump sum which he was willing to accept, but this the defendants refused to pay. The defendants afterwards, as the result of a medical examination which they had made of the applicant, offered another lump sum to the applicant, but this the latter refused. On April 25 the applicant filed a request for arbitration, claiming 15s. a week during incapacity. At the hearing, the applicant gave evidence to the effect that there had been no agreement to settle either by lump sum or weekly payment, and although the defendants had never disputed liability, they had never admitted it. He contended that he was entitled to have an award in his favour. The defendants contended that there was no question to arbitrate upon, as the applicant had been regularly and fully paid by them since the accident. The county-court judge held that the applicant was entitled to an award, and made an order for a weekly payment of 15s. during incapacity. From this decision the defendants now appealed, on the ground that the county-court judge had no jurisdiction to make an award, first, because no question had arisen between the parties within the meaning of Section 1, Sub-section 3, of the Act; and, secondly, because if any question had arisen, it had been settled by agreement.

At the conclusion of the arguments of counsel their lordships held that no question ever did arise between the applicant and the defendants either as to the liability to pay compensation, or as to the amount of compensation, or as to the duration of compensation. There was, therefore, nothing to arbitrate upon. The appeal was accordingly allowed, and judgment entered for the defendants.

Mr. Manisty, K.C., and Mr. Wilberforce appeared for the appellants, and Mr. Danckwerts, K.C., and Mr. A. Sims for the applicant.

CASE UNDER THE PUBLIC HEALTH (LONDON) ACT, 1891.

MR. JUSTICE JOYCE, in the Chancery Division, on the 19th inst., delivered a considered judgment in the case of the London and North-Western Railway Co. *v.* the Mayor, &c., of the City of Westminster, in the action brought by the plaintiffs for an injunction restraining the defendants from continuing to trespass upon premises of the plaintiff company at the corner of Parliament-street and Bridge-street, Westminster.

It appeared that a portion of the corner house abutting on Parliament-street was used by the plaintiffs as offices, and that the defendants had constructed underneath the middle of the street public conveniences, with approaches, by means of subways, from either side of the street, the entrance to the subways being by means of staircases near to the edge of the pavement. The plaintiffs complained that the entrance and staircase to the extent of 2 ft. 9 in. was constructed, not in the roadway, but in the footway, and alleged that to this extent it constituted a trespass upon their property, as the Public Health (London) Act, 1891, only vested the soil of the roadway in the defendants, the soil of the footway being, by presumption of law, vested in the plaintiffs as owners of the adjoining property. The plaintiffs further said that the defendants had no power to make subways under the street.

The defendants justified their action under Section 44 of the Public Health (London) Act, 1891, which gave them power as the Sanitary Authority to provide public conveniences in places where they considered the same were required.

His lordship held, on the evidence, that the land or soil where the staircase was constructed as to 2 ft. 9 in. was the property of the plaintiffs, and, being part of the footway, not liable to be taken and used by the defendants under the Act of 1891 for the construction of the convenience, and granted an injunction for the removal of that portion of the staircase. He thought that the order would do the plaintiffs no good, as the defendants could, if they chose, simply put the staircase 2 ft. 9 in. further into the roadway, so making it stand clear of the footway as it was before the works were commenced. His lordship declined to make an order (as asked for by the plaintiffs) compelling the defendants to restore the old line of the kerb or edge of the footway as it existed at the end of 1889, and stayed the operation of the injunction for six months, with liberty to apply for a further stay in the event of an appeal by the plaintiffs from his decision

Judgment accordingly.

Mr. Younger, K.C., and Mr. Montague Shearman appeared for the plaintiff company, and Mr. Hughes, K.C., and Mr. D. Pollock for the defendants.

RECENT PATENTS:

ABSTRACTS OF PATENTED INVENTIONS.

13,109.—FLUSHING APPARATUS: *S. F. Asbell.*—In order to prevent the freezing of the water a rod joins the closet-seat to a weighted lever at the end of a spindle upon which (in the valve-casing) is an arm; at the end of the arm are side-pins to which are pivoted rods that carry conical valves upon their ends. The flushing-pipe which leads to the basin, the service-pipe, and a draining-pipe that leads to the trap are joined to three nipples respectively, so that the flush will be started as one valve opens and another valve closes with the depression of the seat, but as the seat rises the one valve is closed to arrest the flush, and the other valve is opened for draining the flushing-pipe and the valve-casing.

13,116.—TACKLE FOR LIFTS, &C.: *C. F. Kite.*—A brake-box contains the driving-shaft, with a loose disc and a split brake-ring. In the disc and the pulley are recesses with which the two ends of a double crank respectively engage; a short shaft, having an elliptical section, joins the two cranks, and is passed between a fork upon the brake-ring, the disc being keyed loosely on to the driving-shaft. The pulley and disc will move slightly as regards one another when the power is removed, so as to partially rotate the short shaft in the fork, whereupon the brake-ring expands as it comes into play. In a system of adjustable pulleys for an alignment of the ropes of lift-cages the ropes are passed around pulleys, upon arms, of which the upper ends rest against inclines upon the pulley-frame, and which are bolted in slots cut in the inclines.

13,129.—PROCESS OF MOULDING BRICKS: *O. Faeger.*—The moulding-box is divided into compartments with a set of plates upon its movable side, which is mounted on rollers running in channel-iron guide-rails, and is worked with links and a lever, and the bricks are perforated with core rods; the ends of the rods and plates fit into recesses cut in the opposite and fixed side of the box; vertical sliding-rods worked with a treadle carry a plate beneath the loose bottom plate. In a variant form the inventor devises hand-wheels, pinions, and racks for working the movable side and bottom, and the pawls that retain them in their places are maintained in engagement with the racks by means of springs; handles on the shafts which carry the pawls turn the springs out of action.

13,168 9.—CONCRETE PAVEMENT: *F. Ward.*—To a body of large-gauged stone that has been broken and tarred and screened is added similar stone of smaller gauge as a filling for the interstices; the compound is rolled to render it solid. For paths reduced gauges are used. 13,169.—The stone which is to be broken is passed from a kiln into a hopper and stone-crusher, whence an elevator lifts the fragments to a hopper, from which they are conveyed to screens disposed on different floors and to the sorting bins. The hot and dry broken stone is then thrown out on to a table in a uniformly heated hut, where it is mixed and tarred.

13,227.—A CONTRIVANCE FOR BAND-SAWS: *F. Rech.*—The inventor's object is to enable the bench of a band-sawing machine to be set at an angle so as to make bevel ends. He forms the bench of two parts that are hinged so that one can turn them upwards at any desired angle and then clamp them with set-screws and curved bars. The band-saw passes between the two flaps at their hinges.

13,248.—AIR OR WATER-TESTING PLUGS FOR DRAIN AND OTHER PIPES: *F. S. Reekie.*—In one shape the plug consists of a flexible disc whereof the diameter is larger than that of the pipe, two metal plates that support the disc about its middle, and a screwed handle. As the disc is drawn through the pipe it becomes compressed into the shape of a cup-leather.

13,251.—A FUEL ECONOMISER FOR STOVES AND GRATES: *F. H. Wilkie.*—Into each side of the fireplace is inserted a vertical grating which is secured to a back and to an angled-plate that will direct the heat into the apartment, a perforated metal plate upon the top of the contrivance will serve as a support for a kettle, pan, &c.

13,257.—MANUFACTURE OF VENEERS: *M. Harrass.*—The veneer is made up of two parts, in each of which the two component veneers are disposed with their grains crossed. A compound veneer consists of a sheet of suitable material laid between two veneers. A hollow veneer is formed by enclosing veneer ribs between two compound veneer slabs. Casein cement should be used for the veneers, which are described as being available for covering vaults, columns, arches, and so on, as well as for making doors, furniture, pianoforte-cases, &c.

13,274.—EXCAVATING MACHINES: *T. Whitaker.*—For steam navvies which are employed for excavating narrow cuttings, a tank or platform carries the boiler, and has two studs that will slide in horizontal slots cut in the frame of the revolving table. There are holes in the side plates of the boiler that take bolts upon the lower ends of pivoted links that are joined with rods to the frame of the crane. The body-wheel is made up of segments having teeth within, and affixed to a circular rim of H-section, of which the ends are fastened with flanged fish-plates bolted together. The plates can thus be separated for the replacement of a segment.

13,278.—CONSTRUCTION OF BUILDINGS IN CONCRETE: *E. L. Ransome.*—Walls and structures are moulded with chambers, cells, or shafts, and in the course of the work heated air, carbonic acid gas, or steam is forced into the spaces to harden the concrete, the draught being controlled by means of openings fitted with doors at intervals, and directed over the upper surface of fresh concrete by means of cores, moulding-boards and a cover. 13,279.—For strengthening the joints of concrete and similar structures, the inventor employs metallic coils that are embedded in the material so as to interlock with the layer next adjacent.

13,282.—BLOCKS FOR BUILDING PURPOSES: *H. G. B. Brunckhorst.*—The slabs or blocks are fashioned with horizontal and serrated grooves, into which liquid cement or mortar is filled through passages formed by grooves in the vertical edges of the blocks. Horizontal wires, joined by vertical wires crosswise that can be moved along the horizontal wires, support and strengthen the walls.

13,285.—A CONTRIVANCE FOR CLOSET SEATS: *R. G. Howson.*—The hinge-pin of the seat is inserted through a hole in a block, and the flushing-horn is made in one piece with the block. The invention extends to a similar contrivance as adapted for a cover of the seat.

13,287.—INTERCEPTING TANKS AND TRAPS FOR DRAINS AND SEWERS: *E. Körting.*—A partition, having a grating for its top, divides the container into two portions; a sliding plate, worked with a hand-screw, controls the height of the weir. In some cases a second dividing plate is suspended from the cover. As the pressure rises the air will escape through cocks at the top of the container.

13,319.—PORTABLE BUILDINGS: *W. T. Chafer.*—Vertical bars which will slide in brackets bolted on to the structure carry its feet or wheels; a pivoted catch, which is kept in its place with a loosely-pivoted weight, is pressed by a stopping-pin on a sliding bar, within which will turn a vertical spindle, which carries the front wheel or castor; for lowering the structure on to the ground one lifts the weight off the catch and lets it fall clear of the stopping-pin on the slide-bar.

13,357.—A SCREW SOCKET FOR ELECTRICAL INSULATORS AND SIMILAR OBJECTS: *F. Monjau.*—A socket, to be inserted into walls of stone or other materials, consists of a blank of sheet metal, which is folded at its middle and is pressed upon a screw passed through the middle hole, whereby screw threads are made in the sheet metal; the end lugs are then folded over one another, and the intermediate lugs are turned outwards.

13,371.—FITTINGS FOR WINDOWS: *A. G. Spencer.*—The inventor fastens the glass frames with wooden strips in the frames and renders the joints watertight with corrugated or ribbed strips of india-rubber, which may have a backing of canvas, or the canvas may be fitted with beads of india-rubber. In another adaptation the edge of the glass is taken by a groove in the strip, and rubber beads are secured to the wooden rail. A moulded rubber ring, cut into four parts, furnishes quadrants for packing windows that have rounded corners.

13,399.—A PROP FOR USE WITH DRAWING-BOARDS: *R. W. Sekatzek.*—A frame for the support and adjustment of a drawing-board is made of two portions—a main frame and an adjustable frame hinged together. At the ends of the main frame are teeth that will engage with a bar attached to two rods which are pivoted on to the movable frame, which has a ledge that retains the board in its place.

13,408.—A GOVERNOR FOR GAS SUPPLY: *F. F. Child & R. F. White.*—Upon a stationary plate is mounted a cylindrical valve which has triangular apertures in its sides and a closed top, and is joined to the gas inlet; around the valve is a sleeve which is connected to the top of the governor, and is dipped into a lubricant in an annular vessel which consists of a fixed sleeve; the governor may be shaped as a bell that dips into a liquid seal around its base-plate, or its top and bottom may be joined with a bellows, its interior being put into free communication with the outlet; the fixed sleeve will gradually shut the inlets as the top of the governor ascends, the openings will be similarly uncovered as the top descends.

13,417.—STONE-SAWING MACHINERY: *F. Gay.*—For sawing stone, in stone-cutting yards, a flexible cutter is passed around guiding pulleys upon a jointed or other frame disposed for cutting out hollow articles, the core being cut away with a wire which is led out over guide-rollers in a hole in the side; in another form the wire is led over rollers mounted upon magnets or electro-magnets, so that it may be kept in irregular paths, and for mouldings and so on templets are used for guiding the cutter. The invention comprises numerous other methods for working the wire, and describes various particular forms of wire, chain, and other flexible cutters as adapted for cutting columns, or hollow or irregularly shaped articles, as well as for quarrying, well-sinking, and tunnelling operations.

13,467.—ARTIFICIAL STONE: *T. M. Thom.*—Pure lime, to which unburned limestone may be added, is slaked with water to the consistency of moulding-paste. The dried goods are put into a closed vessel that can resist an internal pressure of from 300 to 400 lbs. per square inch; carbonic acid gas is then admitted at a pressure beginning from about 30 lbs. and increasing gradually so as to keep the stone at a constant temperature of 90 Fahr. The stones are described as being also suitable, when polished, for use in lithography.

13,491.—BUILDING BLOCKS: *G. E. Güssow.*—The inventor seeks to provide building blocks for fire-resisting and non-conducting purposes and having a low specific gravity; they are composed of an admixture of clay, silicious sinter, magnesite or bauxite, and asbestos fibre, together with some organic substance, such as straw or peat-wood, finely divided; the moulded blocks are burned as ordinary bricks.

13,495.—AN APPLIANCE FOR WINDOWS: *Perfection Window Hinge Co.*—In order to facilitate the cleaning of window-sashes, the inventors make the inside and the parting beads in detachable portions, and arrange the sashes so that one can turn them inwards upon detachable hinges. Into the frame and sashes are screwed bushes having bayonet or keyhole slots, with which bayonet-lugs or pins that project from the shanks of hinge pins and sockets will engage; for detaching the sockets and pivots, they are turned until the lugs are opposite the keyhole slots in the bush-flanges.

MEETINGS.

FRIDAY, NOVEMBER 22.

Architectural Association Discussion Section.—Mr. G. H. Smith on "Canterbury Cathedral," illustrated by lantern views. 7.30 p.m.

Birmingham Architectural Association.—Mr. J. A. Gotch on "Architecture of the Eighteenth Century in England."

Glasgow Architectural Craftsmen's Society.—Mr. G. Herbertson on "Foreign Competition in the Building Trades." 8 p.m.

SATURDAY, NOVEMBER 23.

Carpenters' Hall, London Wall.—Viva Voce Examination in Sanitary Building Construction. 12 noon.

British Institute of Certified Carpenters.—Visit to the Vauxhall Bridge Works. 3 p.m.

MONDAY, NOVEMBER 25.

Surveyors' Institution.—Mr. A. Dudley Clarke on "The Final Report of the Local Taxation Commission." 8 p.m.

TUESDAY, NOVEMBER 26.

Institution of Civil Engineers.—Mr. John A. F. Aspinall on "Train Resistance." 8 p.m.

WEDNESDAY, NOVEMBER 27.

Society of Arts.—Mr. J. Gordon Parker, Ph.D., on "Leather for Bookbinding." 8 p.m.

City of London College Science Society.—Mr. E. R. Calthorpe on "Narrow Gauge Light Railways of Heavy Traffic Capacity." 7.30 p.m.

Northern Architectural Association.—Mr. H. S. Kerr on "Melrose Abbey," with lantern views. 7.30 p.m.

THURSDAY, NOVEMBER 28.

Institution of Electrical Engineers.—8 p.m.

FRIDAY, NOVEMBER 29.

Architectural Association.—Mr. Arnold Mitchell on "Capitals," with lantern views. 7.30 p.m.

SATURDAY, NOVEMBER 30.

Dundee Institute of Architecture.—Paper by Mr. W. M. Page, entitled "Notes on Art." 7 p.m.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

November 4.—By LANGRIDGE & FREEMAN (at Snaresbrook).

Snaresbrook.—Tavistock-rd., Home Cottage, f., r. 45*l.*	£675
November 6.—By WM. WESTON (at Paddington).	
Paddington.—6 and 8, Elgin-avenue, u.t. 61½ yrs., g.r. 20*l.*, r. 170*l.*	1,200
23 and 25, Lanhill-rd., u.t. 61 yrs., g.r. 19*l.*, r. 120*l.*	935
71, Chippenham-rd., u.t. 61 yrs., g.r. 9*l.* 10s., r. 50*l.*	505
157 and 159, Ashmore-rd., u.t. 78½ yrs., g.r. 14*l.*, r. 80*l.*	885
Maida Vale.—59, Sutherland-avenue, u.t. 61 yrs., g.r. 12*l.*	600

November 8.—By COOK & BIRMINGHAM (at Exeter).

Crediton, Devon.—The Winstout Estate, 156½ acres, f.	1,500

November 11.—By ALDER & CO.

Finchley.—1 and 2, Claybrook Cottages, f., r. 39*l.*	340
Church-lane, Eastworth Cottage, f., r. 38*l.*	530

By WILLIAM HOUGHTON.

Walthamstow.—Higham-st., The Woodman b.-h., u.t. 38 yrs., g.r. 65*l.*, with goodwill, fixtures, &c.	4,250
Boundary-rd., a block of building land, f.	360
29, Castle-avenue, f., r. 50*l.*	750
Clapham.—Loats-rd., Ravenswood and ¾ of an acre, u.t. 7 yrs., g.r. 1*l.*, e.r. 80*l.*	240

By ROGERS BROS. (at Peckham).

Peckham.—64, Clifton-rd., u.t. 44 yrs., g.r., &c., 4*l.* 3s., r. 36*l.*	285
6, Rye Villas, u.t. 77 yrs., g.r. 7*l.* 7s., e.r. 36*l.*	320

November 12.—By KNIGHT & CO.

Hyde Park.—51, Connaught-st., u.t. 21 yrs., g.r. 8*l.* 8s.	635

By ROGERS, CHAPMAN, & THOMAS.

Pimlico.—11 to 16, Victoria-sq., u.t. 5½ yrs., g.r. 10*l.*, r. 740*l.* £3,005
4 and 5, Albert-st., u.t. 5½ yrs., g.r. 2*l.*, r. 200*l.* 940
255 to 269 (odd), Vauxhall Bridge-rd., u.t. 22½ yrs., g.r. 32*l.*, r. 484*l.* 5,200
10, 26, and 28, Buckingham Palace-rd., u.t. 5½ yrs., g.r. 30*l.*, r. 580*l.* 2,630
Belgravia.—15, Wilton-st., a profit rental of 70*l.* for 9 yrs. 380
8, Lower Grosvenor-pl., u.t. 5¼ yrs., g.r. 1*l.*, r. 180*l.* 700
Newington.—137, Newington Causeway, u.t. 52½ yrs., g.r. 62*l.*, r. 362*l.* 3,110

November 13.—By HUMBERT & FLINT.

Lincoln's Inn.—10, New-sq., freehold chambers on ground floor and basement, r. 250*l.* 4,850
Stanmore Hill, Middx.—A copyhold house, shop, and two cottages 800

By HAROLD GRIFFIN.

Battersea.—171, Church-rd., f., r. 20*l.* 320
175 and 177, Church-rd., f., r. 58*l.* 610
179, Church-rd., f., r. 30*l.*; also f.g.r. 8*l.*, reversion in 75 yrs. 500
65, Surrey-lane, f. 360
24 and 26, Arthur-st., u.t. 55 yrs., g.r. 5*l.* 4s. 410
2, 4, and 6, Freeland-st., u.t. 75 yrs., g.r. 18*l.* 495
60 and 62, Shillington-st., u.t. 58 yrs., g.r. 8*l.* 330
31, Shillington-st., u.t. 58 yrs., g.r. 4*l.* 195
47, Plough-rd., f., e.r. 40*l.* 450
78 and 80, Cabul-st., u.t. 49 yrs., g.r. 5*l.* 400
17, Trott-st., u.t. 66 yrs., g.r. 4*l.* 10s. 265
9, Freeland-st., u.t. 64 yrs., g.r. 4*l.* 165
Chelsea.—67, Seaton-st., u.t. 416 yrs., g.r. 6*l.*, r. 38*l.* 430
Wandsworth.—115, Harbut-rd., u.t. 77 yrs., g.r. 6*l.* 10s. 275
Putney.—42, Schubert-rd., u.t. 82 yrs., g.r. 8*l.* 8s., e.r. 42*l.* 340

By FRANK JOLLY & CO.

Clapton.—47, Downs-rd., f. 1,660
2, Oakfield-rd., f., e.r. 45*l.* 710

By F. H. B. RIDDLE & CO.

Chertsey, Surrey.—95 and 99, Guildford-st., f., r. 60*l.* 1,210

By RUSHWORTH & STEVENS.

Brixton.—Bishop's-rd., The Mitre Tavern, i.g.r. 100*l.*, u.t. 60 yrs., g.r. 40*l.* 1,060
Clapham.—25, Sandmere-rd., u.t. 78¼ yrs., g.r. 8*l.* 10s. 510

By PHILIP STOCK.

Brixton.—56, Somerleyton-rd., u.t. 65 yrs., g.r. 9*l.*, e.r. 50*l.* 350

By WALTON & LEE (at Oxford).

Bicester, Oxon.—Two freehold residences, r. 27*l.* 520
South View and 1 r. 7 p., f. 450
An enclosure of land, 4 a. 1 r. 32 p., f. 190
Lords Farm, 39 a. 1 r. 19 p., f. 950
Fritwell, Oxon.—The King's Head Inn, f., r. 21*l.* 900
Piddington, &c., Oxon.—Cluehill Farm, 115 a. 3 r. 15 p., f. 1,000
Wheatley, Oxon.—Bullsdown Barn and 20 a. 3 r. 16 p., f. 600
Kidlington, Oxon.—Freehold cottage and 7 a. 0 r. 17 p. 400

By WARNER, SHEPPARD & WADE (at Leicester).

Glenfield, Leicester.—The Manor House Farm, 178 a. 3 r. 35 p, f. 7,160
Five freehold cottages 200
New Parks, Leicester.—A freehold farm, 92 a. 2 r. 25 p. 4,631
Thurmby, Leicester.—The Manor House and 11 a. 3 r. 24 p., f. 1,920

By DICKINSON & RIGGALL (at Louth).

Donington-on-Bain, Lincs.—Freehold farm-house and 78½ acres 1,860
Legbourne, Lincs.—Freehold house, two cottages and 12 a. 3 r. 15 p. 1,210
A freehold close, 1 a. 3 r. 14 p. 164

November 14.—By CHESTERTON & SONS.

Kensington.—2, Palace Green, u.t. 41 yrs., g.r. 125*l.* 15,500

By I. FARLOW.

Norwood.—6, Alexandra-rd., u.t. 54 yrs., g.r. 9*l.*, r. 40*l.* 320

By H. J. BLISS & SONS.

Catford.—83, Nelgarde-rd., f., r. 32*l.* 410
Hammersmith.—7, Burfield-st., u.t. 67½ yrs., g.r. 7*l.*, r. 32*l.* 230
Limehouse.—81, Northey-st., f. 195
77 and 79, Northey-st., u.t. 53 yrs., g.r. 3*l.* 10s. 260

By CHAMBERS & GIET.

Kennington.—28 and 30, St. Agnes-pl., u.t. 77½ yrs., g.r. 18*l.*, r. 102*l.* 1,210
Brixton.—178, Leander-rd., u.t. 74½ yrs., g.r. 5*l.*, r. 34*l.* 375

By NORRIS, SON, & HADLEY.

Chelsea.—514, King's-rd., u.t. 53½ yrs., g.r. 1*l.*, e.r. 50*l.* 690

By STIMSON & SONS.

Peckham.—143, Lower Park-rd., f. 430
39, Clifton-rd., u.t. 44½ yrs., g.r. 9*l.* 10s. 6d., e.r. 50*l.* 450
15, Clifton-rd., u.t. 44½ yrs., g.r. 5*l.* 5s. 9d., r. 28*l.* 265
16, Culmore-rd., u.t. 44½ yrs., g.r. 5*l.* 1s. 11d., r. 34*l.* 350
Old Kent-rd.—42 and 42A, Blockhouse-st., u.t. 59¼ yrs., g.r. 4*l.* 10s. 300
Dulwich.—52, 54, 56, and 58, Crawthew-grove, u.t. 77½ yrs., g.r. 20*l.* 980
119 and 121, Crystal Palace-rd., u.t. 64 yrs., g.r. 12*l.* 12s., r. 60*l.* 540
36 and 38, Lacon-rd., u.t. 76 yrs., g.r. 10*l.* 550
Kennington.—78 to 83, St. Paul's-rd., u.t. 46 yrs., g.r. 28*l.* 8s. 1,500
2, 3, 4, and 6, Aldred-rd., u.t. 20½ yrs., g.r. 20*l.* 560
Walworth.—2, Frederick-rd., u.t. 24 yrs., g.r. 5*l.*, r. 28*l.* 180
38, Olney-st., u.t. 14 yrs., g.r. 3*l.* 10s., r. 28*l.* 140
Tooting.—14 to 20 (even), Tintern-st., u.t. 73¼ yrs., g.r. 25*l.* 10s., r. 128*l.* 1,160
1 to 7, Mandrake-rd., u.t. 83½ yrs., g.r. 22*l.* 10s. 1,555
New Cross.—12 to 18 (even), Reaston-st., u.t. 74 yrs., g.r. 20*l.* 1,140
Sydenham.—64 to 78 (even), Miall-rd., u.t. 79 yrs., g.r. 40*l.* 960
Richmond, Surrey.—5, Sheen-pk., u.t. 75¾ yrs., g.r. 10*l.* 10s., r. 44*l.* 355
Bow.—64, 66 and 68, Devons-rd., u.t. 75¼ yrs., g.r. 22*l.* 1s., r. 107*l.* 1,035

November 15.—By JONES, LANG, & CO.

Finsbury Park.—31, Woodstock-rd., u.t. 65½ yrs., g.r. 6*l.* 10s., r. 36*l.* £385

By NORTON, TRIST, & GILBERT.

Notting Hill.—2, Queen Anne's-ter., u.t. 77 yrs., g.r. 7*l.* 10s., e.r. 70*l.* 320
Tilbury, Essex.—Dock-rd., a plot of freehold building land 150

By SINCLAIR & SON.

Hoxton.—49 and 51, Fairbank-st., u.t. 46 yrs., g.r. 6*l.* 10s., r. 90*l.* 1,065
Fulham.—1 to 4, Avalon-rd., u.t. 57½ yrs., g.r. 18*l.* 860
Wimbledon.—93, Kingston-rd., u.t. 57 yrs., g.r. 5*l.*, r. 30*l.* 370

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Hard Stocks	1 12 0	per 1,000 alongside, in river.
Rough Stocks and Grizzles	1 10 0	,, ,,
Facing Stocks	2 12 0	,, ,,
Shippers	2 8 0	,, ,,
Flettons	1 8 0	,, at railway depôt.
Red Wire Cuts	1 13 0	,, ,,
Best Fareham Red	3 11 0	,, ,,
Best Red pressed Ruabon Facing.	5 5 0	,, ,,
Best Blue Pressed Staffordshire	4 6 6	,, ,,
Do., Bullnose	4 10 0	,, ,,
Best Stourbridge Fire Bricks	4 4 0	,, ,,
GLAZED BRICKS		
Best White and Ivory Glazed Stretchers	13 0 0	,, ,,
Headers	12 0 0	,, ,,
Quoins, Bullnose, and Flats	17 0 0	,, ,,
Double Stretchers	19 0 0	,, ,,
Double Headers	16 0 0	,, ,,
One Side and two Ends	19 0 0	,, ,,
Two Sides and one End	20 0 0	,, ,,
Splays, Chamfered, Squints	20 0 0	,, ,,
Best Dipped Salt Glazed Stretchers and Headers	12 0	,, ,,
Quoins, Bullnose, and Flats	14 0 0	,, ,,
Double Stretchers	15 0 0	,, ,,
Double Headers	14 0 0	,, ,,
One Side and two Ends	15 0 0	,, ,,
Two Sides and one End	15 0 0	,, ,,
Splays, Chamfered, Squints	14 0 0	,, ,,
Seconds Quality White and Dipped Salt Glazed	2 0 0	,, less than best.

	s. d.	
Thames and Pit Sand	7 3	per yard, delivered.
Thames Ballast	6 0	,, ,,
Best Portland Cement	32 0	per ton, delivered.
Best Ground Blue Lias Lime	25 6	,, ,,

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 12s 6d. per yard, delivered
Stourbridge Fire-clay in sacks, 28s. od. per ton at rly. dpt

STONE.

	s. d.	
Ancaster in blocks	1 11	per ft. cube, deld. rly. depôt.
Bath ,,	1 7	,, ,,
Farleigh Down Bath	1 8	,, ,,
Beer in blocks	1 6½	,, ,,
Grinshill ,,	1 10	,, ,,
Brown Portland in blocks	2 2	,, ,,
Darley Dale in blocks	2 4	,, ,,
Red Corsehill ,,	2 5	,, ,,
Red Mansfield ,,	2 4	,, ,,
Hard York in blocks	2 10	,, ,,
Hard York 6 in. sawn both sides landings, to sizes (under 40 ft. sup.)	2 8	per ft. super at rly. depôt
,, ,, 6 in. Rubbed Ditto	3 0	,, ,,
,, ,, 3 in. sawn both sides slabs (random sizes)	1 3	,, ,,
,, 2 in. self-faced Ditto	0 9½	,, ,,
Hopton Wood (Hard Bed) in blocks	2	3 per ft. cube. deld. rly. depôt
,, ,, ,, 6-in sawn both sides landings	2	7 per ft. super. deld. rly. depôt.
,, ,, ,, 3-in. do.	1 2½	,, ,,

SLATES.

in. in.	£ s. d.	
20×10 best blue Bangor	11 5 0	per 1000 of 1200 at rly. dep.
,, best seconds	10 15 0	,, ,,
16× 8 best ,,	6 2 6	,, ,,
20×10 best blue Portmadoc	10 18 0	,, ,,
16× 8 best blue Portmadoc	6 0 0	,, ,,
20×10 best Eureka unfading green	11 2 6	,, ,,
16× 8 ,, ,,	6 15 0	,, ,,
20×10 Permanent green	10 0 0	,, ,,
16× 8 ,, ,,	5 12 6	,, ,,

PRICES CURRENT (*Continued*).

TILES.

	s. d.	
Best plain red roofing tiles	41 6	per 1,000 at rly. depôt
Hip and valley tiles	3 7	per doz. ,, ,,
Best Broseley tiles	48 6	per 1,000 ,, ,,
Hip and valley tiles	4 0	per doz. ,, ,,
Best Ruabon Red, brown or brindled Do. (Edwards)	57 6	per 1,000 ,, ,,
Do. ornamental Do.	60 0	,, ,, ,,
Hip tiles	4 0	per doz. ,, ,,
Valley tiles	3 9	,, ,, ,,
Best Red or Mottled Staffordshire Do. (Peakes)	50 9	per 1,000 ,, ,,
Hip tiles	4 1	per doz. ,, ,,
Valley tiles	3 8	,, ,, ,,

WOOD.

BUILDING WOOD.—YELLOW.

	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	13 10 0	15 10 0
Deals: best 3 by 9	13 0 0	14 10 0
Battens: best 2½ in. by 7 in. and 8 in. and 3 in. by 7 in. and 8 in.	10 0 0	11 0 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in
Deals: seconds	1 0 0	lesstban bes
Battens: seconds	0 10 0	,, ,, ,,
2 in. by 4 in. and 2 in. by 6 in.	8 10 0	9 10 0
2 in. by 4½ in. and 2 in. by 5 in.	8 0 0	9 0 0
Foreign Sawn Boards—		
1 in. by 1½ in. by 1½ in.	0 10 0	more than battens.
¾ in.	1 0 0	,,
Fir timber: Best middling Danzig or Memel (average specification)	At per load of 50 ft. 4 10 0	5 0 0
Seconds	4 5 0	4 10 0
Small timber (8 in. to 10 in.)	3 12 6	3 15 0
Swedish balks	2 15 0	3 0 0
Pitch pine timber (30 ft.)	3 0 0	3 10 0
JOINERS' WOOD.	At per standard.	
White Sea: First yellow deals, 3 in. by 11 in.	22 0 0	23 0 0
3 in. by 9 in.	20 0 0	21 0 0
Battens, 2½ in. and 3 in. by 7 in.	15 0 0	16 0 0
Second yellow deals, 3 in. by 11 in.	17 0 0	18 0 0
,, ,, 3 in. by 9 in.	15 10 0	16 10 0
Battens, 2½ in. and 3 in. by 7 in.	12 0 0	13 0 0
Third yellow deals, 3 in. by 11 in. and 9 in.	12 10 0	13 10 0
Battens, 2½ in. and 3 in. by 7 in.	10 10 0	11 10 0
Petersburg: first yellow deals, 3 in. by 11 in.	19 0 0	20 0 0
Do. 3 in. by 9 in.	16 0 0	17 0 0
Battens	12 10 0	13 0 0
Second yellow deals, 3 in. by 11 in.	14 0 0	15 0 0
Do. 3 in. by 9 in.	13 0 0	14 0 0
Battens	11 0 0	12 0 0
Third yellow deals, 3 in. by 11 in.	11 10 0	12 10 0
Do. 3 in. by 9 in.	11 0 0	12 0 0
Battens	10 0 0	11 0 0
White Sea and Petersburg:—		
First white deals, 3 in. by 11 in.	13 10 0	14 10 0
,, ,, ,, 3 in. by 9 in.	12 10 0	13 0 0
Battens	10 10 0	11 10 0
Second white deals 3 in. by 11 in.	12 10 0	13 10 0
,, ,, ,, 3 in. by 9 in.	12 0 0	12 10 0
,, ,, battens	9 10 0	10 10 0
Pitch pine: deals	16 0 0	18 0 0
Under 2 in. thick extra	0 10 0	1 0 0
Yellow Pine—First, regular sizes	32 0 0	33 10 0
Broads (12 in. and up)	2 0 0	more.
Oddments	22 0 0	24 0 0
Seconds, regular sizes	24 10 0	26 10 0
Yellow Pine Oddments	20 0 0	22 0 0
Kauri Pine—Planks, per ft. cube	0 3 6	0 4 6
Danzig and Stettin Oak Logs—Large, per ft. cube	0 2 6	0 3 0
Small ,, ,,	0 2 3	0 2 6
Wainscot Oak Logs, per ft. cube	0 5 0	0 5 6
Dry Wainscot Oak, per ft. sup. as inch	0 0 8	0 0 7
¾ in. do. do.	0 0 7	- - -
Dry Mahogany—		
Honduras, Tabasco, per ft. sup. as inch	0 0 9	0 0 11
Selected, Figury, per ft. sup. as inch	0 1 6	0 2 0
Dry Walnut, American, per ft. sup. as inch	0 0 10	0 1 0
Teak, per load	16 0 0	20 0 0
American Whitewood Planks—Per ft. cube	0 3 0	0 3 6
Prepared Flooring—	Per square	
1 in. by 7 in. yellow, planed and shot	0 13 0	0 16 6
1 in. by 7 in. yellow, planed and matched	0 13 6	0 17 6
1¼ in. by 7 in. yellow, planed and matched	0 15 0	1 0 0
6 in. at 6d. per square less than 7 in.		
1 in. by 7 in. white, planed and shot	0 11 0	0 12 6
1 in. by 7 in. white, planed and matched	0 11 6	0 13 6
1¼ in. by 7 in. white, planed and matched	0 13 6	0 15 6
6 in. at 6d. per square less than 7 in.		

JOISTS, GIRDERS, &c.

	In London, or delivered to Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	6 5 0	7 5 0
Compound Girders ,, ,,	8 0 0	9 0 0
Angles, Tees and Channels, ordinary sections	8 2 6	9 2 6
Flitch Plates	8 10 0	9 0 0
Cast Iron Columns and Stanchions, including ordinary patterns	7 0 0	8 0 0

[See also page 475.

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

(For some Contracts, &c., still open, but not included in this List, see previous issues.)

COMPETITIONS.

Nature of Work.	By whom Required.	Premiums.	Designs to be delivered
Hospital	Burslem Corporation	100*l.* and 50*l.*	Dec. 20
Art Schools	Hull Corporation	100*l.*, 60*l.*, 40*l.*	Jan. 31

CONTRACTS.

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, &c., Supplied by	Tenders to be delivered
Street Works	Walthamstow U.D.C.	G. W. Holmes, Civil Engineer, Town Hall, Walthamstow	Nov. 26
Additions to Business Premises	Newbottle (Durham) Co-op. Soc.	Secretary, Co-operative Society's Offices, Newbottle	do.
Iron Rails, &c., Fairfield	Cockermouth U.D.C.	J. Fearon, Council Offices, Cockermouth	do.
Additions to Marine House, Bridlington	Dr. Wetwan	S. Dyer, Architect, Bridlington	do.
Additions to Netherfield Works, Kendal		R. Walker, Architect, Windermere	do.
Additions to Church, Garndiffaith, Pontypool	Willesden District Council	Swash & Bain, Architects, Newport, Mon.	do.
*Road-making and Paving Works	Barnet U.D.C.	Engineer to Council, Public Offices, Dyne-road, Kilburn, N.W.	do.
*Making-up Roads	Glamorgan County Council	Surveyor, 40, High-street, Barnet	Nov. 27
Additions to Police Station, Mountain Ash	L. & Y. Railway Company	T. M. Franklen, Westgate-street, Cardiff	do.
Warehouse, Liverpool		H. Shelmerdine, Hunt's Banks, Manchester	do.
Additions to Schools, Braithwell, near Rotherham	Glasgow Corporation	E. T. Hubbard, Architect, Moorgate-street, Rotherham	do.
Sewerage Works, Partick	Lancaster Corporation	City Engineer, City Chambers, Glasgow	do.
Tram Rails, &c.	Burton-upon-Trent Corporation	W. A. Tester, Engineer, Town Hall, Lancaster	do.
Bricks, Clay, &c.	East Barnet Valley U.D.C.	F. L. Ramsden, Engineer, Gas Works, Burton-on-Trent	do.
Bridge, Cat Hill	Kilkenny R.D.C.	H. York, Surveyor, Station-road, New Barnet	Nov. 28
Boundary Wall, Dunbell	Rathmines & Rathgar U.D.C.	K. Comerford, Council Offices, Kilkenny	do.
Houses, Upper Rathmines	Ramsgate Corporation	F. G. Hicks, Architect, 28, South Frederick-street, Rathmines	do.
Shelter, &c., West Cliff	Sheffield Corporation	Borough Surveyor, Town Hall, Ramsgate	do.
Stables, &c., Winter-street Hospital	Iron Company Limited	C. F. Wike, Civil Engineer, Town Hall, Sheffield	do.
14 Cottages, Nelson-street, Consett	Nelson (Lancs) Corporation	C. E. Oliver, Architect, Consett	do.
Water Supply Works, Ogden Valley		J. Newton & Co., Engineers, 17, Cooper-street, Manchester	do.
Reservoir, Barr Wood, St. Ninian's, Stirlingshire	Wanstead U.D.C.	Crouch & Hogg, 53, Bothwell-street, Glasgow	do.
Additions to Cottage Hospital	Moss Side U.D.C.	C. H. Bressey, Surveyor, Council Offices, Wanstead	do.
Entrance Gates, &c.	Halifax Industrial Society	H. B. Longley, Engineer, Moss Side, Lancs	do
Additions to Bakehouse, Queen's-road		M. Hall, Architect, 29, Northgate, Halifax	Nov. 29
Cottage, Aylstone Hill, Hereford	Wirral R.D.C.	Nicholson & Hartree, Architects, Halifax	do.
Road, Lydiate-road, Heswall	Admiralty	T. Davies, Surveyor, Eastham	do.
*New Coastguard Buildings, Northumberland	Carlisle Corporation	District Clerk of Works, 21, Bootham-terrace, York	do.
Fencing, Gates, &c., at Market	Trelewis (Wales) Building Club	H. C. Marks, Civil Engineer, 36, Fisher-street, Carlisle	Nov. 30
13 Houses and Shops	Williton (Somerset) Guardians	T. Roderick, Architect, Clifton-street, Aberdare	do.
Drainage Works at Workhouse	Mr. E. J. Pugh	T. H. Andrew, Surveyor, Williton	do.
Four Houses, Pandy Estate, Aberkenfig	Egremont (Cumberland) Sch. Bd	E. J. Pugh, Prince of Wales Hotel, Aberkenfig	do.
Schools, Main-street	Halifax School Board	J. S. Moffatt, Architect, 53, Church-street, Whitehaven	do.
School, Haugh Shaw	Whitby Co-operative Society	C. F. L. Horsfall & Son, Architects, Lord-st. Chambers, Halifax	do.
Additions to Premises, Baxtergate	Mr. J. Mudd	J. J. Milligan, Architect, Whitby	do.
House, Windermere	Illogan School Board	R. Walker, Architect, Windermere	do.
School, Illogan, Churchtown		S. Hill, Architect, Green-lane, Redruth	do.
Club Premises and Hall, Ripponden, near Halifax	Margate Council	W. C. Williams, Architects, 29, Southgate, Halifax	do.
*Supply of Articles (Waterworks Department.)	Trevethin School Board	F. Stanley, Waterworks Office, Margate	Dec. 2
Schools, Lower Garndiffaith, Pontypool	Aylsham (Norfolk) Guardians	Lansdowne & Griggs, Architects, Newport, Mon.	do.
Alterations at Workhouse	The Right Hon. Baron Dunleath	J. B. Pearce, Architects, 15, Upper Hing-street, Norwich	do.
Inn, Ballywater, Co. Down	Glasgow Parish Council	W. J. Fennell, Architect, 2, Wellington-place, Belfast	do.
Hospital, Duke-street	Windsor Building Club	J. Baxter, 243, Vincent-square, Glasgow	do.
Nineteen Cottages, Quaker's Yard, Glam	Trinity House Corporation	W. Dowdeswell, Architect, John-street, Treharris	do.
*Lighthouse, Fog Signal House, &c., Dungeness	Great Northern Railway Company	Trinity House, E.C.	do.
*Stores Contracts	Poplar, &c., Sick Asylum District	Stores Superintendent, Doncaster	Dec. 3
*Alterations, &c., to Laundry	Whitley and Monkseaton U.D.C.	J. & S. F. Clarkson, Architects, 136, High-street, Poplar, E.	do.
Road Works, Whitley	Leyton U.D.C.	J. P. Spencer, Civil Engineer, 30, Howard-street, North Shields	do.
*Extension of Electric Lighting Works	Hove Corporation	W. Dawson, Town Hall, Leyton	do.
*Paving Works	Croydon Council	Borough Surveyor, Town Hall, Hove	Dec. 4
*Extensions to Polytechnic	do.	Borough Engineer, Town Hall, Croydon	Dec. 6
*Heating and Ventilating Works	Commissioners of H.M. Works, &c	do.	do.
*New County Court, Middlesbrough	Wolverhampton Council	The Registrar, County Court, Middlesbrough	Dec. 9
*Enlargement of Town Hall	Erith U.D.C.	F. T. Beck, Architect, Wulfrun Chambers, Wolverhampton	do.
*Electric Light Station	Middlesex County Council	W. Egerton, 12, Queen's-road, Erith	do.
*Additions to Polytechnic, Bedford Park		H. T. Wakelam, Architect, Guildhall, Westminster, S.W.	do.
*Maisonette Houses, Wandsworth	London County Council	F. & W. Stocker, 90, Queen-street, Cheapside, E.C.	Dec. 10
*Superstructure of Three Blocks of Artisans' Dwellings	Bethnal Green, London, Guardians	Architect's Department, Housing Branch, 18, Pall Mall East, S.W.	do.
Water Supply Works at Workhouse	West Cheshire Water Company	G. H. Hughes, Engineer, 97, Queen Victoria-street, E.C.	do.
Laying Mains, Station-rd. to Prenton Hill, Birkenhead	Hartley Wintney Union	W. M. Jones, 9, Hamilton-square, Birkenhead	Dec. 11
*Additions, &c., to Infirmary, Winchfield	Wantage (Berks) U.D.C.	H. T. Sugden, Architect, Enersley, Winchfield	Dec. 13
Sewage Disposal Works	Sevenoaks U.D.C.	E. B. Ormond, Council Offices, Wantage	Dec. 14
*Isolation Hospital	Watford School Board	W. H. Ansell, Architect, 11, Great James-street, W.C.	Dec. 16
*New School	The Proprietor	J. Hunt, Architect, 40, Upper Baker-street, N.W.	No date
*Erection of House, Broadstairs		W. H. Woodroffe, Architect, 32, High-street, Southwark, S.E.	do.
Footpath, Hurstbourne Tarrant, near Andover	Mr. E. Wilson	J. Wormald, South Cottage, Andover	do.
Rebuilding The Garden Gate Inn, Hunslet		W. M. Coggill, Architect, Beech Grove, Stourton	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*Assistant Examiner in H.M. Office of Works, &c.	Walthamstow U.D.C.	Not stated	Nov. 28
*Depot Superintendant and Storekeeper	Woolwich Council	2*l.* 10s. per week	do.
*Drainage Assistant	do.	2*l.* 2s. per week	Nov. 29
*Accounts Clerk	Edmonton School Board	110*l.*	do.
*Clerk of Works	Lancashire County Council	3*l.* 13s. 6d. per week	Dec. 3
*Main Road Surveyor	Edmonton U.D.C.	200*l.*, &c.	Dec. 7
*Clerk of Works	Public Works Department	Four to Five Guineas per week	No date
*Mason, Northern Nigeria	H.M. Dockyard, Pembroke Dock	250*l.*	do.
*Engineering and Architectural Draughtsmen		2*l.* 14s. per week each	do.

Those marked with an asterisk (*) are advertised in this Number. ***Competitions*, p. iv.** ***Contracts*, pp. iv. vi. viii. x. & xix.** ***Public Appointments*, pp. xvi. xvii. & xix.**

PRICES CURRENT (*Continued*)

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON.—		
Common Bars	8 0 0	8 10 0
Staffordshire Crown Bars, good merchant quality	8 10 0	9 0 0
Staffordshire "Marked Bars"	10 10 0	- - -
Mild Steel Bars	9 0 0	9 10 0
Hoop Iron, basis price	9 5 0	9 15 0
" " galvanised	16 0 0	- - -
("* And upwards, according to size and gauge.)		
Sheet Iron, Black.—		
Ordinary sizes to 20 g.	10 0 0	- - -
" " to 24 g.	11 0 0	- - -
" " to 26 g.	12 10 0	- - -
Sheet Iron, Galvanised, flat, ordinary quality.—		
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	12 10 0	- - -
" " 22 g. and 24 g.	13 0 0	- - -
" " 26 g.	14 0 0	- - -
Sheet Iron, galvanised, flat, best quality.—		
Ordinary sizes to 20 g.	16 10 0	- - -
" " 22 g. and 24 g.	17 0 0	- - -
" " 26 g.	18 10 0	- - -
Galvanised Corrugated Sheets.—		
Ordinary sizes, 6 ft. to 8 ft. 20 g.	12 10 0	- - -
" " 22 g. and 24 g.	13 0 0	- - -
" " 26 g.	14 0 0	- - -
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	12 5 0	- - -
" " 22 g. and 24 g.	13 5 0	- - -
" " 26 g.	14 5 0	- - -
Cut nails, 3 in. to 6 in.	9 10 0	10 0 0
(Under 3 in. usual trade extras.)		

LEAD, &c.

	Per ton, in London. £ s. d.	£ s. d
LEAD—Sheet, English, 3 lbs. & up.	14 0 0	- - -
Pipe in coils	14 10 0	- - -
Soil Pipe	17 0 0	- - -
ZINC—Sheet—		
Vieille Montagne ton	24 10 0	- - -
Silesian	24 0 0	- - -
COPPER—		
Strong Sheet per lb.	0 1 0½	- - -
Thin "	0 1 2	- - -
Copper nails "	0 1 2	- - -
BRASS—		
Strong Sheet "	0 0 11	- - -
Thin "	0 1 1	- - -
TIN—English Ingots "	0 1 3½	- - -
SOLDER—Plumbers' "	0 0 6½	- - -
Tinmen's "	0 0 8	- - -
Blowpipe "	0 0 9	- - -

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds	2¾d. per ft. delivered.
" " fourths	2¼d. " "
21 oz. thirds	3¾d. " "
" " fourths	3¼d. " "
26 oz. thirds	4¾d. " "
" " fourths	4¼d. " "
32 oz. thirds	5¾d. " "
" " fourths	5¼d. " "
Fluted sheet, 15 oz.	3¼d. " "
" " 21 "	4¼d. " "
½ Hartley's Rolled Plate	2¾d. " "
⅝ " " "	3¼d. " "
¾ " " "	3¾d. " "

OILS, &c.

	£ s. d.
Raw Linseed Oil in pipes per gallon	0 2 11
" " " in barrels "	0 3 0
" " " in drums "	0 3 2
Boiled " " in pipes "	0 3 1
" " " in barrels "	0 3 2
" " " in drums "	0 3 4
Turpentine, in barrels "	0 2 3
" in drums "	0 2 6
Genuine Ground English White Lead per ton	21 10 0
Red Lead, Dry "	22 0 0
Best Linseed Oil Putty per cwt.	0 9 0
Stockholm Tar per barrel	1 12 0

VARNISHES, &c.

	per gallon. £ s. d
Fine Elastic Copal Varnish for outside work	0 16 6
Best Elastic Copal Varnish for outside work	1 0 0
Best Elastic Carriage Varnish for outside work	0 16 0
Best Hard Oak Varnish for inside work	0 10 6
Best Extra Hard Church Oak Varnish for inside work	0 10 6
Fine Hard Copal Varnish for inside work	0 16 0
Best Hard Copal Varnish for inside work	1 0 0
Best Hard Carriage Varnish for inside work	0 16 0
Extra Pale Paper Varnish	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 6
Berlin Black	0 16 0
Knotting	0 10 0
Best French and Brush Polish	0 10 0

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TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 10 a.m. on Thursdays*. N.B.—We cannot publish tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of tenders accepted unless the amount of the tender is given, nor any list in which the lowest tender is under £100, unless in some exceptional cases and for special reasons.]

*** Denotes *accepted*. † Denotes *provisionally accepted*.**

BECKENHAM.—For the erection of two firemen's cottages, &c., Shortlands, for the Urban District Council. Mr. J. A. Angell, Surveyor, Council Offices, Beckenham :—

General Builders, Ltd.	£2,176 0 0	Barden & Head	£1,490 0 0
H. Chapman	1,768 0 0	A. P. Poingdestre	1,432 0 6
Thomas & Edge	1,699 0 0	E. Orphin	1,326 10 0
Foster Bros.	1,567 0 0	H. Heathfield	1,316 0 0
W. Wallis	1,521 0 0		

CARLISLE.—For the construction of underground lavatories, Market-place, for the Corporation. Mr. H. C. Marks, C.E., 36, Fisher-street, Carlisle. Quantities by engineer :—

J. & R. Bell	£1,375 10 0	Beaty Bros.	£1,360 0 0
Baty & Sons	1,375 0 0	John Laing, Milbourne-st.*	1,338 0 0
James Beaty	1,373 19 7		

[Engineer's estimate, £1,350]

DOVER.—For the erection of a public-house and premises in the Elms-road, for Messrs. Thompson & Son, Ltd. Messrs. Edward W. Fry & Miller, architects, Cannon-street, Dover :—

Hayward & Paramor	£1,690	Warren & Son	£1,548
Goldsmith & Tapley	1,670	J. Parsons	1,537
Lewis & Sons	1,635	Austin & Lewis*	1,498
W. Bromley	1,556	[All of Dover.]	

DOVER.—For widening Folkestone-road, &c., for the Town Council. Mr. H. E. Stilgoe, C.E., Town Hall, Dover. Quantities by the Borough Engineer :—

G. Munro	£1,519 2 0	D. & G. Keeler, Dover	£1,314 4 0
G. Grigg	1,470 18 4		
Austin & Lewis	1,455 6 0		

EASTBOURNE.—For the construction of public conveniences, &c., Grand Parade, for the Corporation. Mr. R. M. Gloyne, C.E., Town Hall, Eastbourne :—

J. C. Lacey, Kilkenny, Willingdon-road, Eastbourne* £3,150

ELLASTONE (Staffs).—For filter-beds, &c., for sewage disposal works, for the Mayfield Rural District Council. Mr. John Twemlow, surveyor, Mayfield Grange, Ashbourn. Quantities by surveyor :—

Birch & Sons	£171	William Salt, Ellastone*	£150
William Thorley	155		

[Surveyor's estimate, £145 8 3.]

FARNBOROUGH.—For the supply of Pennant stone kerbs and channelling and laying same, for the Urban District Council. Mr. J. E. Hargreaves, Surveyor, Town Hall, Farnborough :—

Bentham & Co.	£504	W. H. Wheeler	£375
S. T. Clothier	448	Free & Co.	316
Wm. Norris	433	Free Bros., Marlboro'*	315
Payne & Co	397		

HARROGATE.—For the execution of street works, Grange-avenue, &c., for the Corporation :—

Grange-avenue.

J. Dunn, 15, Beresford-terrace, Harrogate £452 19 11

Unity-grove.

Brooks & Son, 31, Grange-avenue, Harrogate 580 0 0

Back South Side of Unity-grove.

J. Buckley, 29, Wedderburn-road, Harrogate 214 15 4

Back North Side of Unity-grove.

Dickinson & Long, Starbeck 310 19 11

HARROGATE.—For the erection of steam laundry, Starbeck, for the Corporation. Mr. F. Bagshaw, Borough Engineer, Municipal Offices, Harrogate :—

Mason.—A. Brown, Harrogate*	£1,650 3 10
Joiner.—G. H. Carrick, Harrogate*	320 0 0
Plumber.—J. M. Pratt, Harrogate*	227 10 0
Ironwork.—Abbott & Co., Gateshead-on-Tyne*	540 10 5
Painter.—J. W. Gill, Harrogate*	35 4 10
Plasterer.—M. M. Bartholomew Scotton, Knaresbrough*	10 19 4½
Slaters.—W. H. & E. Walton, Bingley*	120 0 0

HATFIELD PEVEREL.—For the erection of an addition to Gardners, Hatfield Peverel, Essex, for Mr. A. Rosling. Mr. C. E. Salmon, architect, Bell-street, Reigate, Surrey :—

J. Smith & Son	£325	Frank Johnson, Chelmsford*	£305
Ernest West	321	F. W. Owers	280

HEMEL HEMPSTEAD.—For kerbing, paving, &c. at Hemel Hempstead :—

Stiff's Concrete Co.	£480 10 7	A. T. Cattley	£443 7 2
Dupont & Co.	480 2 8	James Barry	392 1 2
H. Williams	456 8 10	H. Brown, Watford*	391 0 0

HODDESDON.—For kerbing, paving, &c., at Hoddesdon :—

Wallace & Inns	£1,043 13 0	Kitteringham	£788 18 4
Dupont & Co.	896 6 8	Nowell & Co.	782 5 0
George Mann	883 6 0	Griffiths & Co.	778 9 2
Free & Sons	862 13 4	W. & C. French	773 19 2
T. Adams	816 17 4	Victoria Stone Co., London*	759 6 1
Empire Stone Co.	800 13 4		

HOVE (Sussex).—For the execution of road works, Caburn road. Mr. H. H. Scott, Borough Surveyor, Town Hall, Hove :—

Parsons & Sons, 118, Church-road, Hove* .. £293

HOYLAND.—For various works for the Hoyland Nether School Board. Mr. W. J. Sykes, architect, Hoyland Nether, Yorks :—

Additional Classrooms at the Boys' Schools, Hoyland Common.

Masonry, &c.—Mark A. Hague, Hoyland, near Barnsley	£488 15 0
Joinery, &c.—Geo. Cook, Hoyland Common, near Barnsley*	350 0 0
Slating.—M. Fleming, Eastgate, Barnsley*	83 0 9
Plastering.—M. Fleming, Eastgate, Barnsley.	34 15 0
Plumbing, Glazing, and Painting.—Firth & Sons, Hoyland, near Barnsley*	112 0 0
Heating Apparatus.—Newton, Chambers, & Co., Thorncliffe Ironworks, Sheffield	26 0 0
	£1,094 10 0

Caretaker's House, Boys' School, Hoyland Common.

Masonry, &c.—Mark A. Hague, Hoyland, near Barnsley*	£183 10 0
Joinery.—Haydn Brearley, Hoyland Common, near Barnsley*	59 10 0
Slating.—M. Fleming, Eastgate, Barnsley*	21 12 6
Plastering.—M. Fleming, Eastgate, Barnsley*	14 15 0
Plumbing, Painting, and Glazing.—Firth & Sons, Hoyland, near Barnsley*	30 10 0
	£309 17 6

Caretaker's House, Girls' School, Hoyland Common.

Masonry, &c. — Saml. Hawke, Hoyland Common, near Barnsley*	£202 10 0
Joinery.—Haydn Brearley, Hoyland Common, near Barnsley*	61 12 6
Slating.—M. Fleming, Eastgate, Barnsley*	21 17 0
Plastering.—Jas. McPartlain, Hoyland, near Barnsley*	14 10 0
Plumbing, Glazing, and Painting.—W. H. Rawlin, Hoyland, near Barnsley*	33 19 0
	£334 8 6

Caretaker's House at Hoyland Nether.

Masonry, &c.—Saml. Hawke, Hoyland Common, near Barnsley*	£170 0 0
Joinery.—N. Mell, Hoyland Nether, near Barnsley*	64 18 0
Slating.—M. Fleming, Eastgate, Barnsley*	19 12 6
Plastering. — Jas. McPartlain, Hoyland Nether, near Barnsley*	14 10 0
Plumbing, Glazing, and Painting. — W. H. Rawlin, Hoyland Nether, near Barnsley*	31 19 0
	£300 19 6

Asphalting Playgrounds, New Conveniences, Porch, &c., at the Girls' School, Hoyland Common.

Masonry.—Mark A. Hague, Hoyland, near Barnsley*	£235 10 0
Joinery.—H. Brearley, Hoyland Common, near Barnsley*	25 15 7
Plumbing, Glazing, and Painting.—W. H. Rawlin, Hoyland, near Barnsley*	10 19 0
	£272 4 7

Teachers' Residence, Hoyland Common—Alterations in position of fireplaces, walling-up windows, &c.

Builder.—H. Hemingway, Hoyland Common, near Barnsley*	£22 0

HOYLAND.—For erecting a Primitive Methodist chapel and schools, &c., at Hoyland Common. Mr. W. J. Sykes architect, Hoyland Nether :—

Masonry, &c.—Mark A. Hague, Hoyland, near Barnsley*	£1,080 0 0
Joinery.—Geo. Cook, Hoyland Common	730 0 0
Slating.—Wm. Cooper, Wentworth, near Rotherham*	157 0 0
Plastering.—M. Fleming, Eastgate, Barnsley*	100 0 0
Plumbing, Painting, and Glazing.—C. Firth & Sons, Hoyland, near Barnsley*	150 0 0
Heating.—Newton, Chambers, & Co., Thorncliffe, near Sheffield*	97 0 0
	£2,314 0 0

HOYLAND.—For erecting two houses in Allott-street, Hoyland Common, for Messrs. H. & C. Allott. Mr. W. J. Sykes, architect, Hoyland Nether :—

Masonry, &c. — A. Hemingway, Hoyland Common, near Barnsley*	£173 0 0
Joinery. — H. Brearley, Hoyland Common, near Barnsley*	83 0 0
Slating.—M. Fleming, Eastgate, Barnsley*	22 5 0
Plastering.—Jas. McPartlain, Hoyland, near Barnsley*	24 10 0
Plumbing, Glazing, and Painting.—H. W. Rawlin, Hoyland, near Barnsley*	18 0 0
	£320 15 0

[*See also next page.*

HOYLAND.—Two houses in Tinker-lane, Hoyland Common, for Messrs. Hutchinson & Turner. Mr. W. J. Sykes, architect, Hoyland Nether :—
Thos. Thawley, Blacker Grange, near Barnsley* £520

HOYLAND.—For one house in Queen-street, Hoyland Common, for Mrs. Geo. Hague. Mr. W. J. Sykes, architect, Hoyland Nether :—
Mark A. Hague, Hoyland, near Barnsley* ..£135 10

LONDON.—For new Presbyterian church, Muswell Hill, N. Messrs. Geo. Baines and Reginald P. Baines, architects, 5, Clement's-inn, Strand, London :—

Lascelles & Co.	£7,820	Battley, Sons, & Holness	£7,048
Higgs & Hill	7,562	Thompson & Beveridge	6,979
H. F. & H. Higgs	7,560	Turtle & Appleton	6,971
Matlock Bros.	7,267	T. G. Minter	6,887
W. J. Maddison	7,261	Johnson & Co., Ltd.*	6,251
Chessum & Son	7,244	J. O. Richardson (withdrawn)	6,122
Holliday & Greenwood	7,222		

LONDON.—For erecting new offices, &c., No. 246, Rotherhithe-street, S.E., for Messrs. Bellamy's Wharf, Ltd. Mr. John Jas. Downes, architect, 199, Lewisham High-road, New Cross, S.E. :—

Chalkley	£2,600	S. R. Best	£2,147
Jerrard & Sons	2,184	T. D. Leng	2,118

LONDON.—For the erection of offices and shops, Brixton Hill, S.W., for Mr. W. H. Daw. Messrs. Dale & Gadsdon, architects, 8, Union-court, Old Broad-street, E.C. Quantities by Mr. W. James Pamphilon, 21, Finsbury Pavement, E.C. :—

Kemp	£5,050 0	Sharpe	£4,250 10
Hoare	4,983 0	Irwin	4,250 0
Peacock Bros.	4,560 0	Staines & Son*	4,248 0
Candler & Son	4,294 10		

LONDON.—For making up, &c., Margravine and other roads, for the Fulham Borough Council. Mr. C. Botterill, C.E., Town Hall, Fulham :—

Roome & Co.	£7,500 0	Martin, Wells, & Co.	£6,440 0
Barker & Co.	6,998 0	Stimpson & Co.	6,380 0
Smith & Sons	6,997 0	H. L. Holloway	6,256 0
Spencer, Santo, & Co.	6,696 0	Foster Bros.	6,196 0
R. E. Nightingale	6,635 0	Lole & Lightfoot	5,984 5
T. Bendon	6,587 0	F. G. Minter	5,891 0

LONDON.—For making-up Harold-road, for the Tottenham Urban District Council. Mr. W. H. Prescott, M.Inst.C.E., 712, High-road, Tottenham :—
C. Bloomfield, Tottenham* £432 16 8

PEMBROKE.—For the erection of a new workhouse infirmary. Mr. E. H. Lingen Barker, architect, Hereford :—

Brown, Thomas & John	£4,124 5 0	Davis & Morgan	£3,573 0 0
Davies & Griffiths	3,702 3 9	David Davies	3,378 0 0
Lewis & Co.	3,645 0 0	Thomas, Watkins, & Co.	3,378 0 0

PAIGNTON.—For alterations and additions to Primley House, for Mr. H. C. Belfield. Messrs. Bridgman & Bridgman, architects, Torquay and Paignton. Quantities by Mr. Vincent Cattermole Brown, Paignton :—

General Constructive Works.

R. Harris	£2,689	W. Lethbridge	£2,639
G. Webber	2,664	Webber & Sons	2,615
E. Westlake	2,652	Dart & Pollard*	2,602
C. & R. E. Drew	2,648		

Internal Plumber's Work.

C. Bootyman* £209 18

Decorations.

Webber & Sons	£195 0	C. & R. E. Drew	£188 10
Thomas & Jennings*	188 15	Thomas & Son	184 0

ROCHFORD.—For women's new wards, administration block, covered ways, and alterations to existing infirmary at the Rochford Union, Essex, for the Rochford Board of Guardians. Messrs. Greenhalgh & Brockbank, architects, Southend. Quantities by Mr. G. T. G. Wright, 3, Great Winchester-street, London, E.C. :—

Moss	£8,888	Shelbourne	£6,389
J. Band	7,500	Potter	6,318
Turner & Co.	6,995	Harris & Rowe	6,270
Coulson & Loftus	6,776	Davis & Leaney	6,195
F. & E. Davey	6,546	Dupont	6,097
Howard & Ruffle	6,538	W. E. Davey	6,079
McKay	6,470	E. West, Chelmsford*	6,078

ST. ALBANS (Herts.).—For cottage residence, Blenheim-road, St. Albans. Mr. S. Doddimeade Edmunds, architect, St. Albans and London :—

E. Dunham	£809 0	W. Sharp	£564 0
Vail & Co.	648 0	Goodchild & Sons	560 0
W. Sparrow	589 10		

[All of St. Albans].

TOTNES (Devon).—For the erection of a cottage, Redworth, for Mr. M. F. Stapylton. Mr. W. F. Tollit, architect, High-street, Totnes :—

T. Brook	£296	Tozer & Son	£247
Reeves & Sons	287	Henry Albert	203
H. J. Almond	250	R. E. Narracott, Stoke Gabriel, Totnes*	197
Leaman & Kinsman	248		

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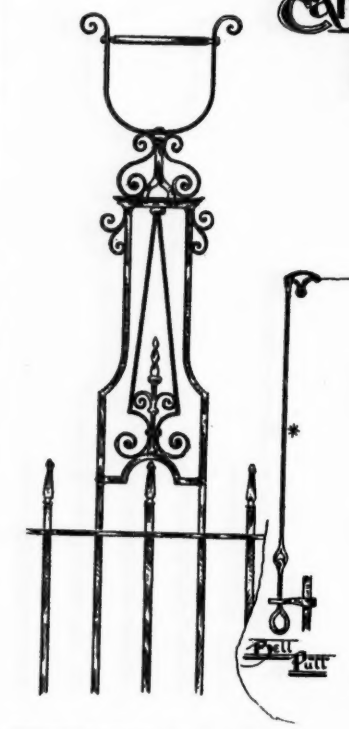

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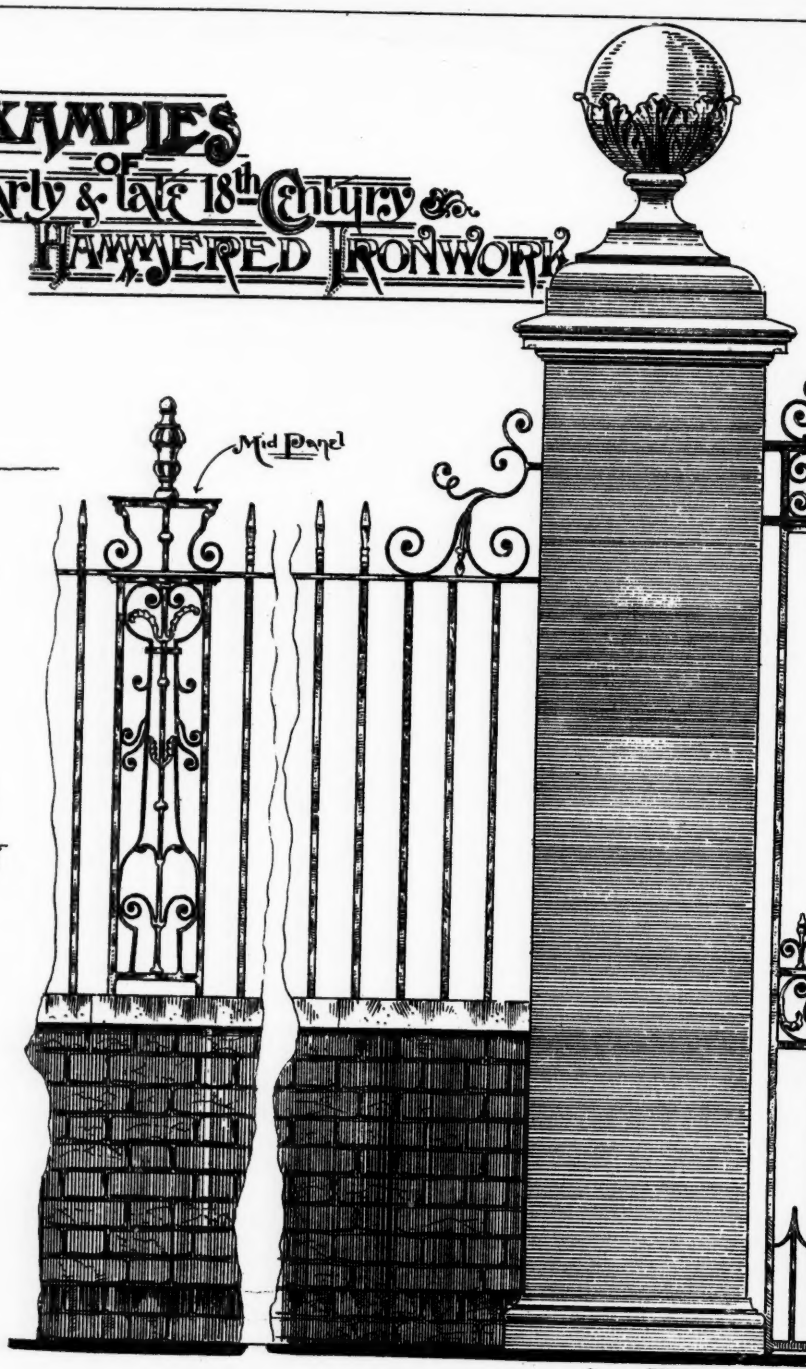

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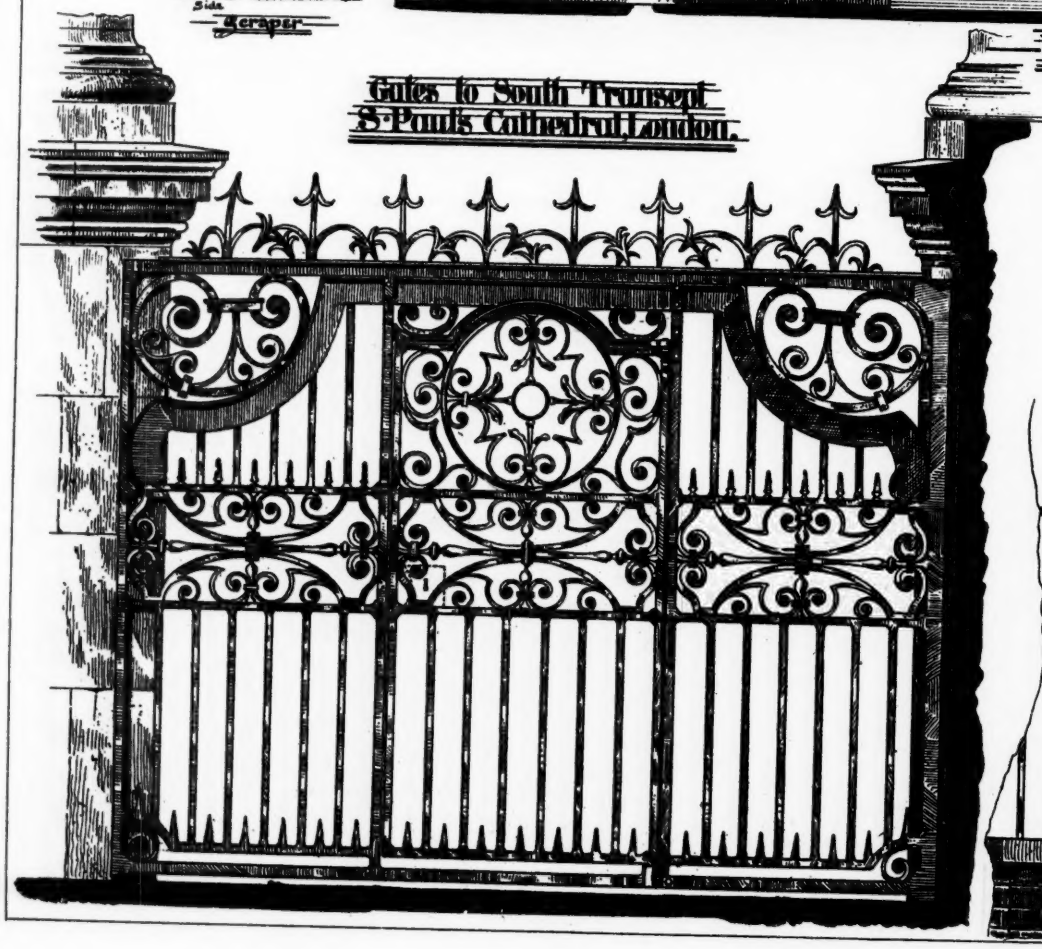

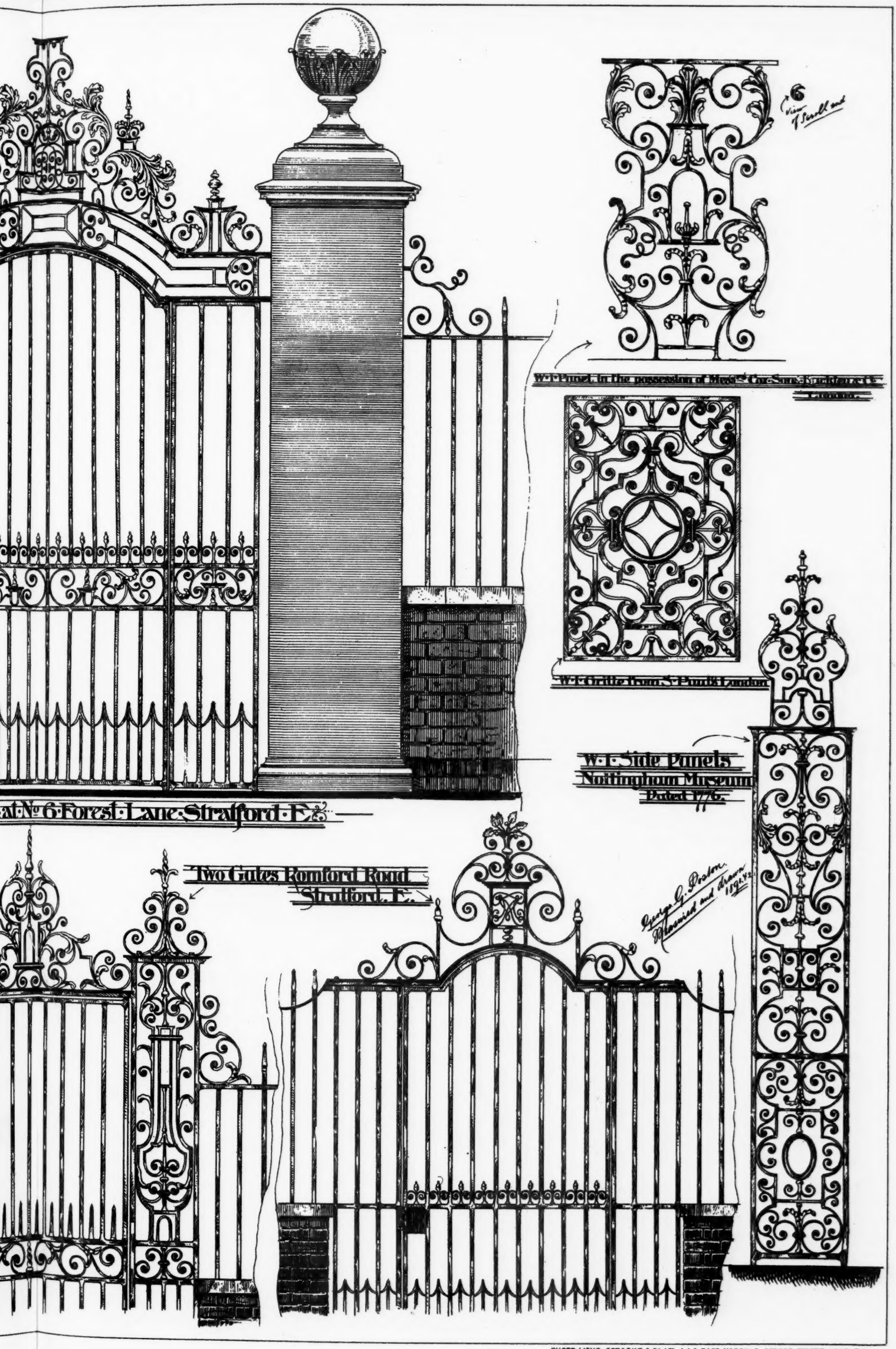
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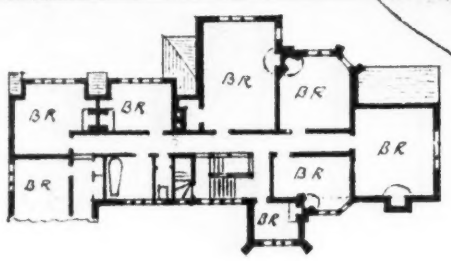

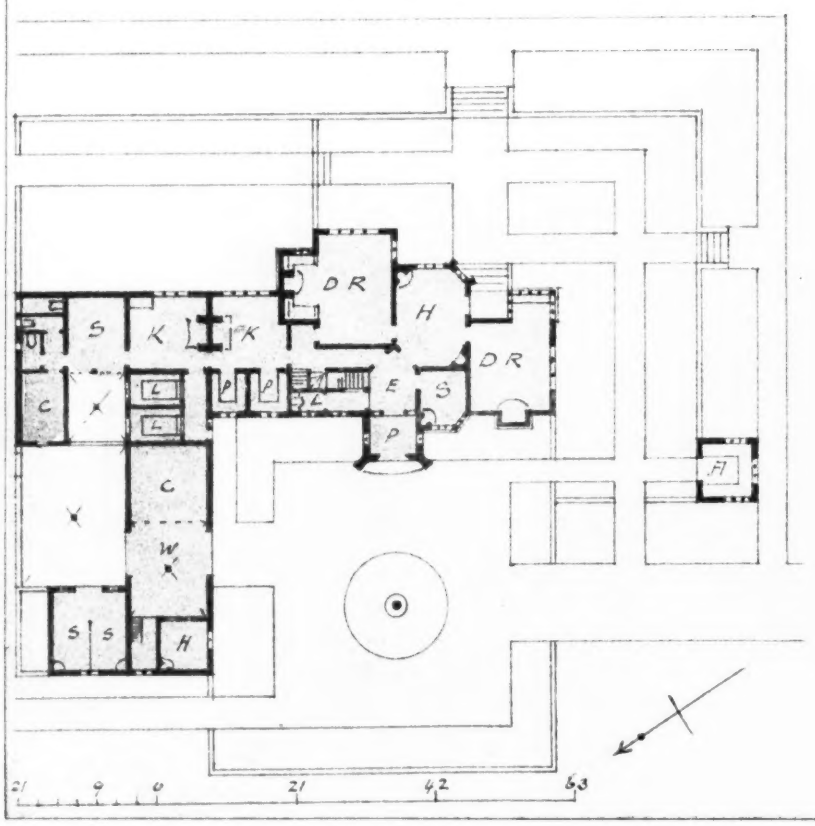

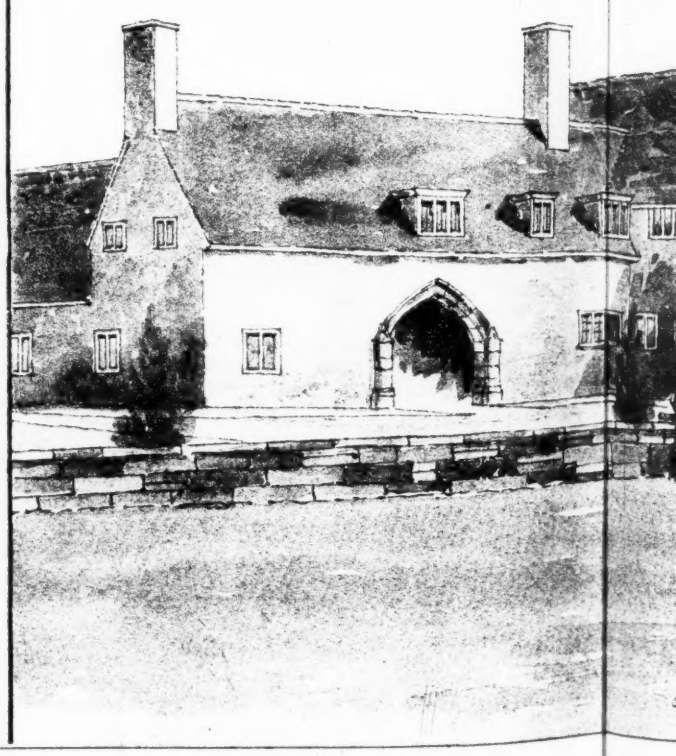

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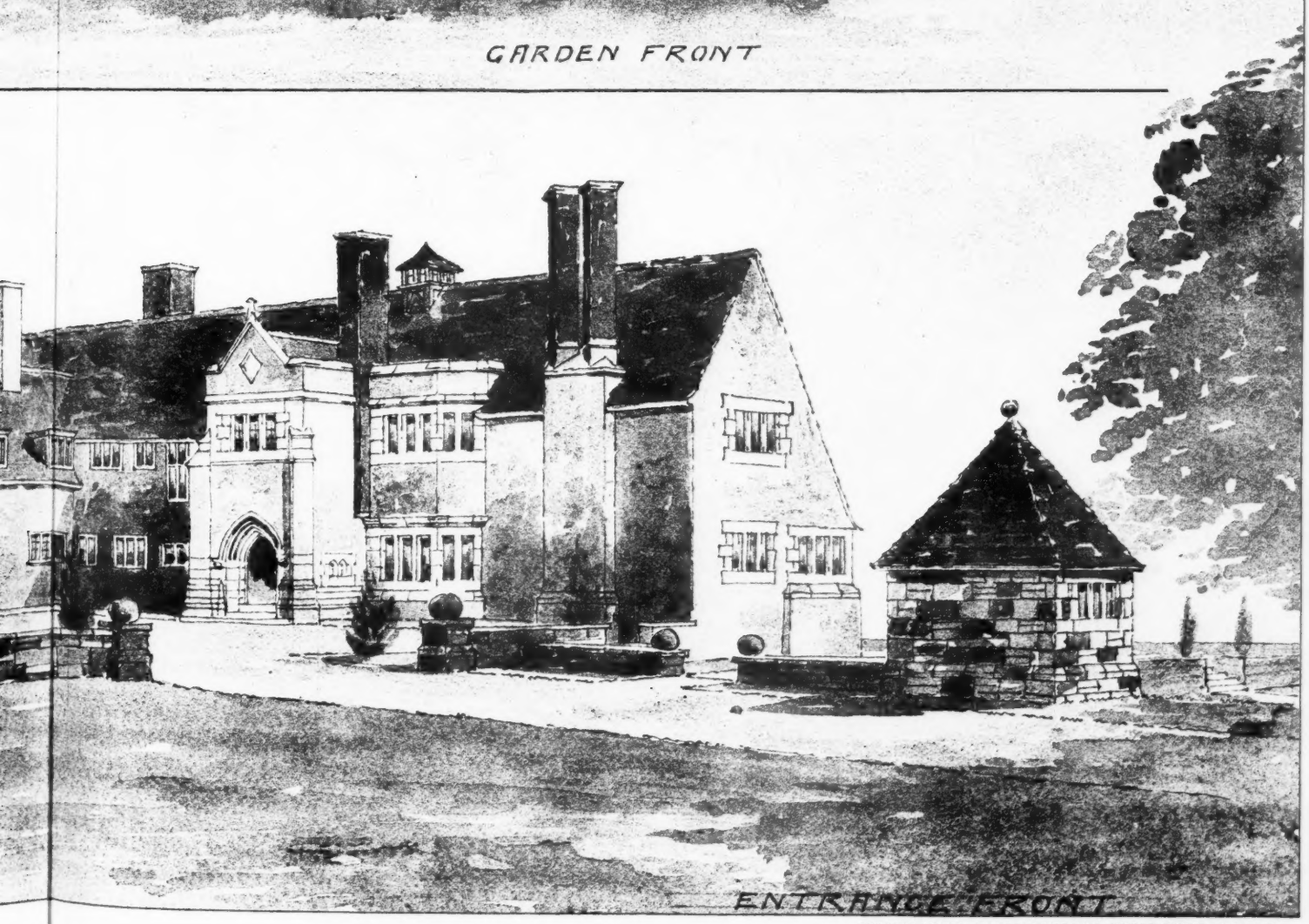

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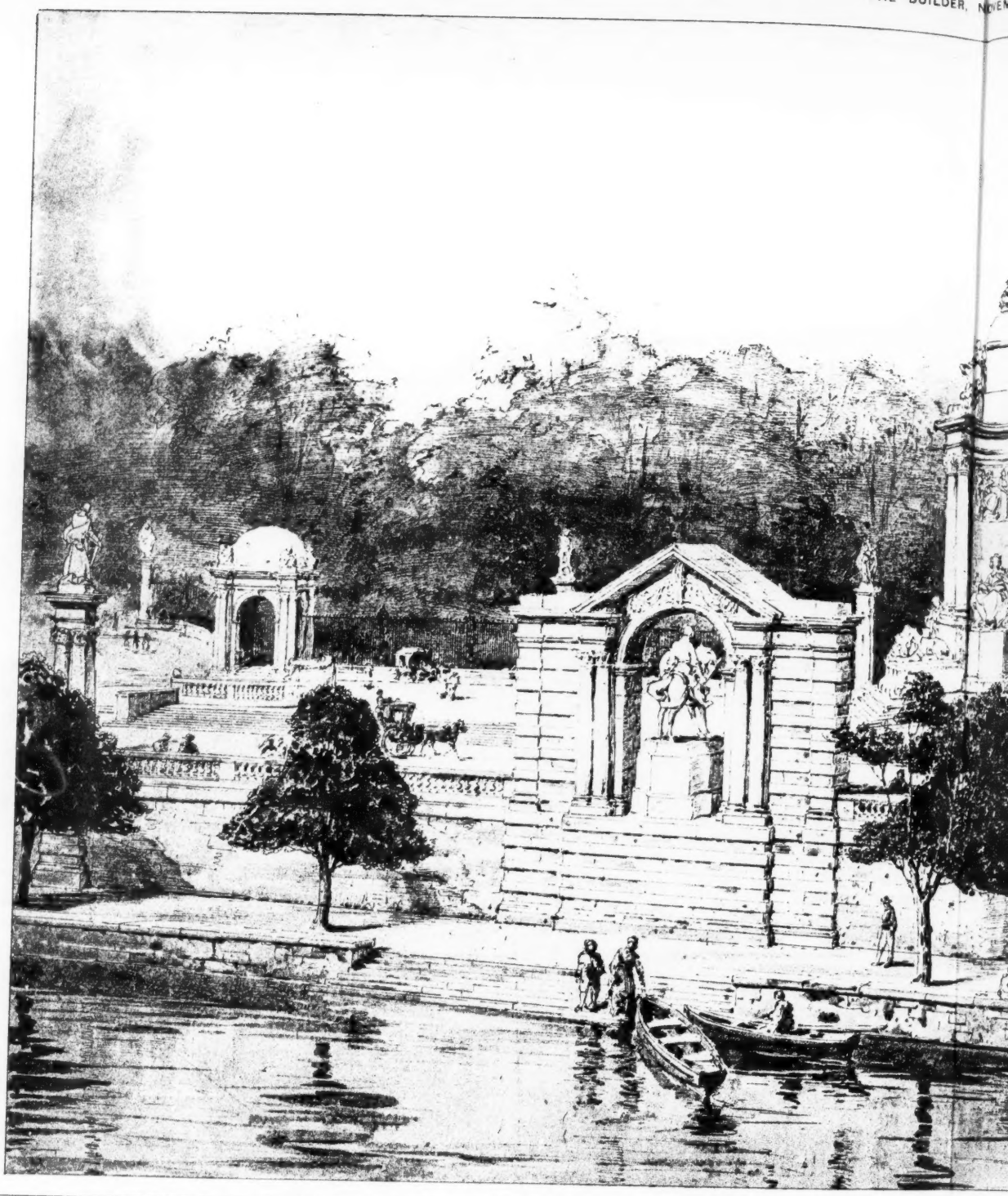

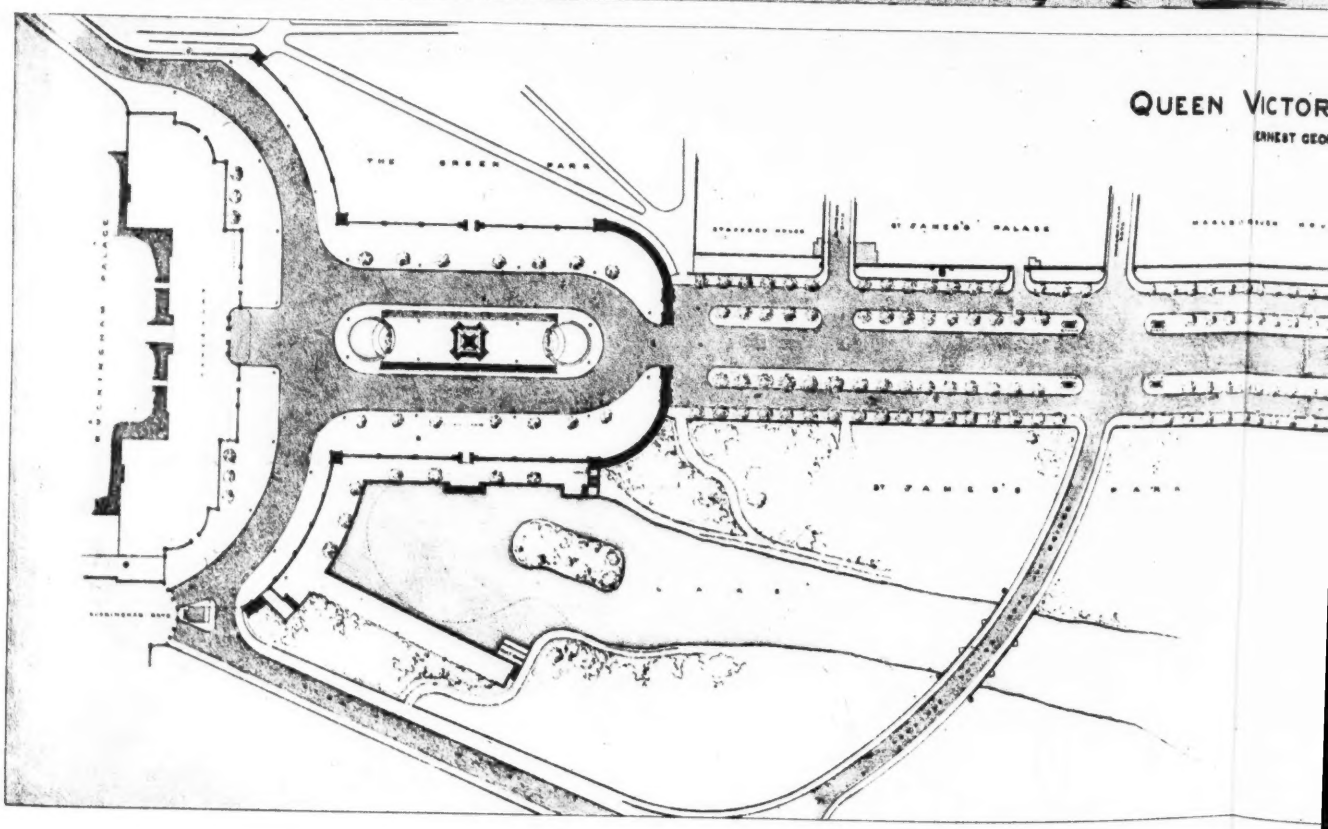

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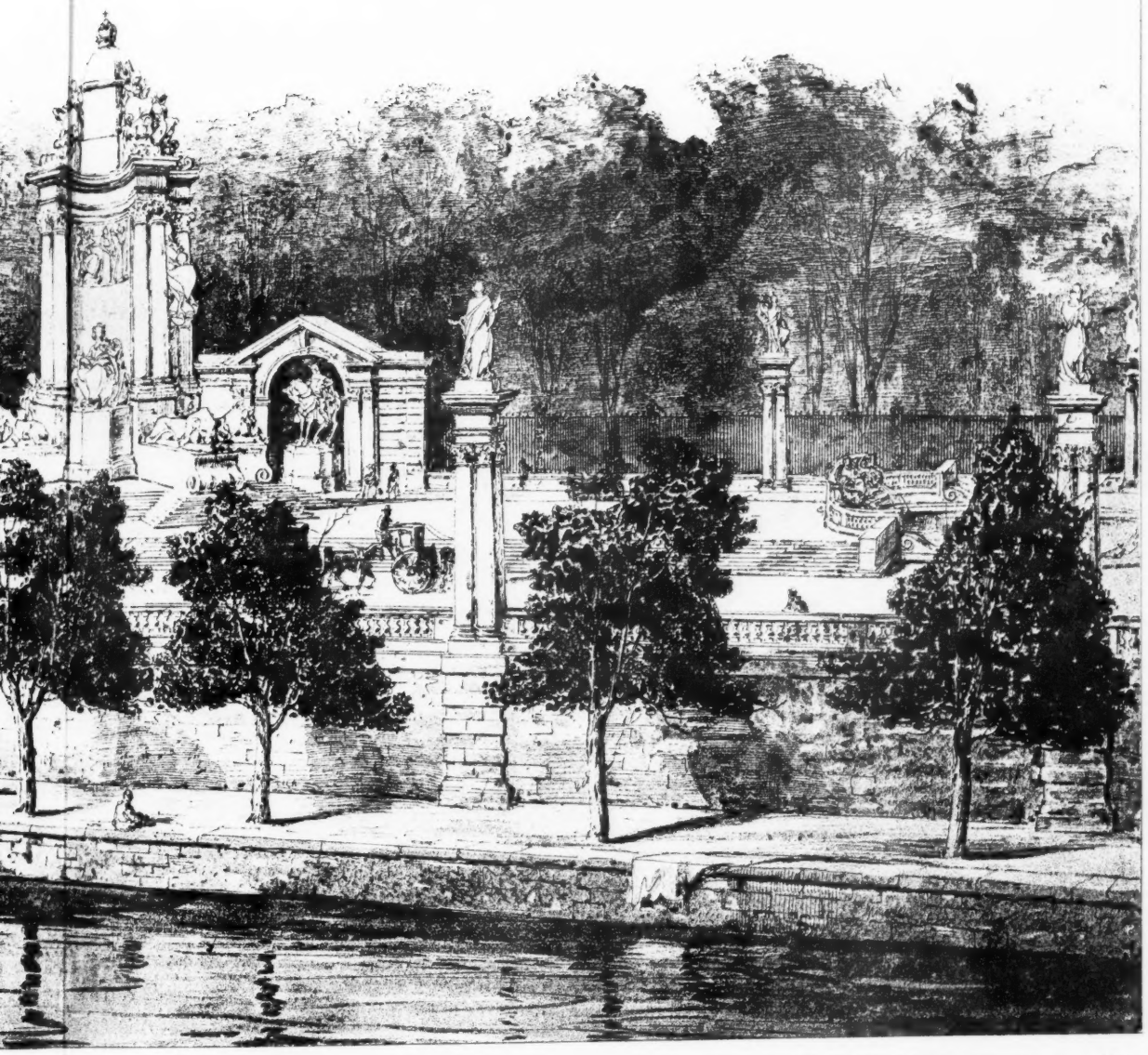

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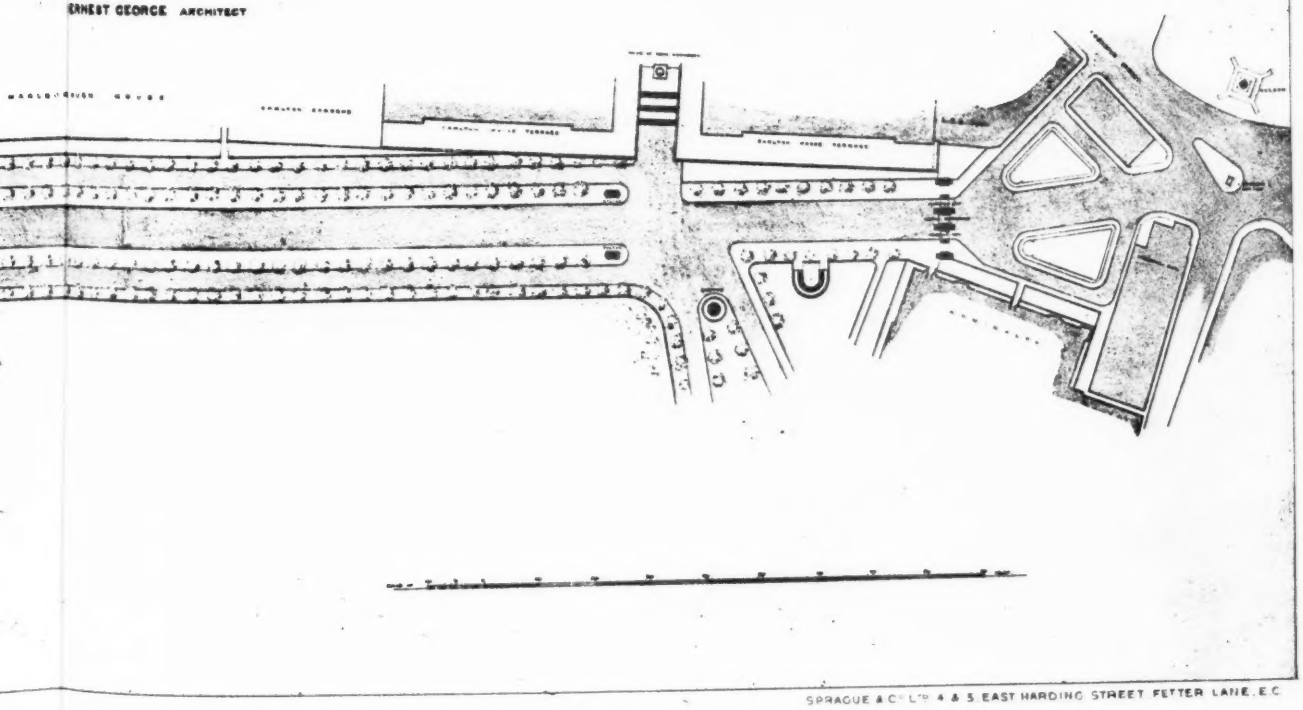

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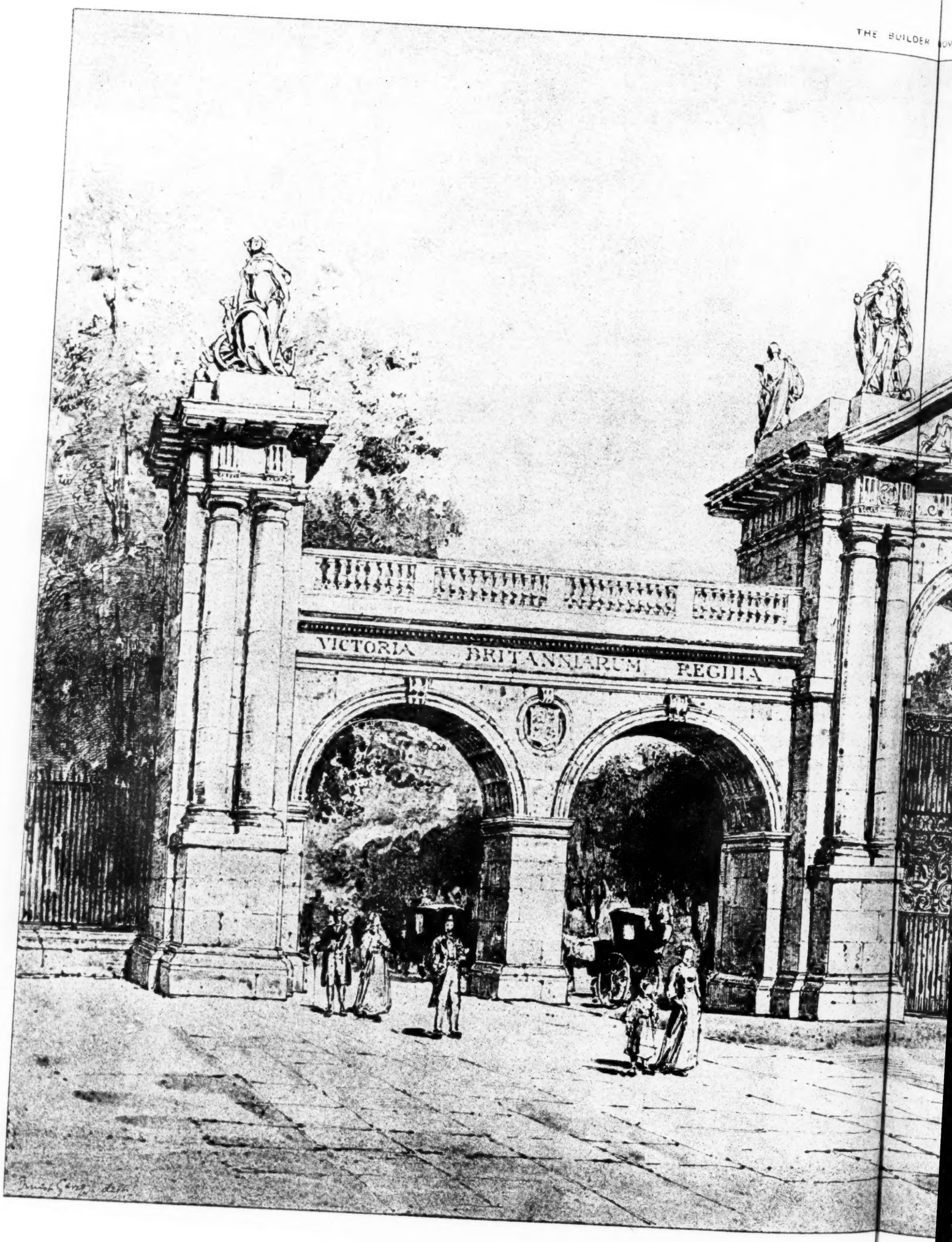

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